

DOCTORAL THESIS

Embodying kinaesthetic empathy a practice-based and interdisciplinary investigation

Rova, Marina

Award date:
2017

Awarding institution:
University of Roehampton

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Embodying Kinaesthetic Empathy:

A practice-based and interdisciplinary investigation



by

Marina Rova

MA, BA Hons

A thesis submitted in partial fulfilment of the requirements for
the degree of PhD

Volume I

Department of Psychology
Centre for Arts Therapies Research
University of Roehampton

2016

Abstract

This practice-based interdisciplinary thesis unpacks 'kinaesthetic empathy' as an intersubjective phenomenon within clinical practice. The project is grounded in embodied interdisciplinary research and is informed by dance movement psychotherapy (DMP), phenomenology and cognitive neuroscience. The investigative work unfolded over a series of 'embodied practice focus groups' in collaboration with: (i) a group of 'non-experienced movers' formed by a multi-disciplinary team of clinicians (NHS Lab) within East London NHS Foundation Trust and (ii) a group of 'experienced movers' comprising a combination of dance movement psychotherapists and dance artists (Studio Lab). This mixed-methods study includes: (i) qualitative inquiry (experiential work, phenomenological focus groups and questionnaires) and (ii) quantitative findings (electrical measures of brain activity using electroencephalography; EEG). Research outcomes include: (i) A measure of motor cortex involvement in movement processing; (ii) phenomenological analysis of participants' accounts and (iii) embodied performance work. The qualitative analysis of the Focus Group fieldwork generated six thematic components of kinaesthetic empathy congruent with both research participant groups: (i) kinetic attunement, (ii) familiarity, (iii) intersubjectivity, (iv) socio-political dynamics, (v) embodied knowing and (vi) mirroring. From the statistical analyses of the EEG tests carried out three broad findings can be reported. First, Mu suppression increased over time. Second, before the intervention there were a high number of differences in movement conditions for the Studio Lab participants; but fewer differences were observed between movement conditions for NHS Lab participants. Importantly, no differences between movement conditions were observed between the two groups after the intervention. Finally, different patterns of decreases in power at the mu frequency, relative to baseline, were observed between central and occipital locations for the majority of the tests

carried out. Thematic analysis of audience and performer responses, after the live dance theatre performance |mu|, produced four 'kinaesthetic stories': (i) the knowing body, (ii) the performance journey, (iii) inter-connectedness and (iv) being moved. The research project straddles art, science and clinical practice boundaries and contributes to discourses of embodied empathy and intersubjectivity within clinical contexts.

Key terms: kinaesthetic empathy, mirror neurons, EEG, dance movement psychotherapy, phenomenology, interdisciplinarity, practice-based research.

Table of Contents

Abstract.....	2
Table of Figures.....	7
Acknowledgements	9
Abbreviations	12
Transcriptions and conventions	13
Chapter One: Introduction	15
1.1 Background.....	16
1.2 Motivation for this Research.....	19
1.3 Structure of the thesis.....	21
Chapter Two: Literature Review	24
2.1 Definition of key terms	24
2.1.1 Intersubjectivity	25
2.1.2 Kinaesthetic embodiment.....	29
2.1.3 Empathy	31
2.2 Locating the research field.....	35
2.2.1 Dance movement psychotherapy	35
2.2.2 Phenomenology.....	39
2.2.3 Cognitive Neuroscience	41
Chapter Three: Interdisciplinary Methodology	47
3.1 Phenomenological inquiry	47
3.2 Embodied practice	50
3.3 The scientific lens	52
3.4 Interdisciplinarity	54
Chapter Four: Interdisciplinary Methods.....	58
4. 1 Fieldwork Stage 1: Data Collection.....	59
4.1.1 Research Participants	59
4.1.2 Fieldwork Design.....	63
4.1.3 Ethical Considerations	73
4.1.4 Analysis Procedures.....	76
4.2 Fieldwork Stage 2: Embodied Performance	77

4.2.1 Research Participants	78
4.2.2 Fieldwork Design	78
4.2.3 Ethical Considerations	82
4.2.4 Analysis Procedures for Embodied Performance	83
Chapter Five: ‘Embodied Words’ (Qualitative Findings – Fieldwork Stage 1)	84
5.1 Embodied Practice Focus Groups	84
5.1.1 Kinetic Attunement	86
5.1.2 Familiarity	97
5.1.3 Intersubjectivity	103
5.1.4 Socio-political Dynamics	113
5.1.5 Embodied Knowing	124
5.1.6 Mirroring	131
5.2 Research Questionnaire	137
5.2.1 Definitions of empathy	137
5.2.2 Empathy and the therapeutic relationship	138
5.2.3 Empathy and non-verbal communication	138
5.2.4 Manifestations of empathy within clinical contexts	138
5.2.5 Embodied learning	138
Chapter Six: ‘Embodied Numbers’ (Quantitative Findings – Fieldwork Stage 1)	139
6.1 EEG Study	139
6.1.1 Introduction	141
6.1.2 Methods	147
6.1.3 Statistical Analysis	153
6.1.4 Results	154
6.1.5 Discussion	160
6.2 Research Questionnaire (quantitative components)	169
6.2.1 Findings	170
Chapter Seven: ‘Kinaesthetic Stories’ (Qualitative Findings – Fieldwork Stage 2)	175
7.1 The knowing body	178
7.2 The performance journey	182
7.3 Inter-connectedness	186
7.4 Being moved	190
Chapter Eight: Interdisciplinary Discussion	194
8.1 Kinaesthetic Empathy: Innate Capacity and Acquired Knowledge	196

8.1.1 Kinaesthetic empathy as innate capacity.....	197
8.1.2 Kinaesthetic empathy as acquired knowledge	198
8.1.3 Broader socio-political implications of kinaesthetic empathy	200
8.2 The Dancing Body: Psychotherapy and Performance Intersections	203
8.2.1 Dance performance as a therapeutic tool in DMP	204
8.2.2 The lived experience of dance performance	206
8.3 Embodied Reflexivity: MODEs of interaction	208
8.4 Minding the (Moving) Body	211
8.5 To ‘Empathise’ or Not to ‘Empathise’? That Is The Question	213
8.6 Interdisciplinary Investigation: Treasures and Pitfalls.....	216
Chapter Nine: Concluding Reflections	219
Bibliography	223

Table of Figures

<i>Figure 1: De Mentis preview at the 1st National Dance & Dementia Conference, 2010 (photo by Eric Foxley, Performance by Evangelia Kolyra, George Tsagdis & Tasha Colbert, Artistic Direction by Marina Rova).</i>	17
<i>Figure 2: Interdisciplinary Formulation of the research thesis</i>	56
<i>Figure 3: Fieldwork Roadmap.</i>	58
<i>Figure 4: NHS Lab group sample.</i>	60
<i>Figure 5: Studio Lab sample.</i>	63
<i>Figure 6: Fieldwork Stage 1 design.</i>	63
<i>Figure 7: Embodied Practice Focus Group participant attendance</i>	69
<i>Figure 8: Research Participant during the EEG.</i>	70
<i>Figure 9: Research Questionnaire.</i>	72
<i>Figure 10: Fieldwork Stage 2 participants in rehearsal</i>	80
<i>Figure 11: Fieldwork Stage 2 participants during the live dance theatre performance mu .</i>	81
<i>Figure 12: Art and Photography Exhibition of mu </i>	81
<i>Figure 13: Kinaesthetic Empathy thematic development</i>	85
<i>Figure 14: The Whell of Kinaesthetic Empathy.</i>	85
<i>Figure 15: Kinetic Attunement subthemes</i>	86
<i>Figure 16: Familiarity subthemes</i>	98
<i>Figure 17: Intersubjectivity subthemes.</i>	104
<i>Figure 18: Socio-political Dynamics subthemes</i>	113
<i>Figure 19: Embodied Knowing subthemes</i>	125
<i>Figure 20: Mirroring subthemes</i>	132
<i>Figure 21: Definitions of Empathy</i>	137
<i>Figure 22: Empathy and the Therapeutic Relationship.</i>	138
<i>Figure 23: Empathy and Non-verbal Communication</i>	138
<i>Figure 24: Manifestations of Empathy within Clinical Contexts</i>	138
<i>Figure 25: Embodied Learning</i>	138
<i>Figure 26: EEG being prepared (left) and worn by research participant (right).</i>	140
<i>Figure 27: Mu Wave Suppression marked at B.</i>	141
<i>Figure 28: NHS Lab participant during EEG session.</i>	149
<i>Figure 29: Clusters of Electrodes used in the EEG analysis.</i>	152

<i>Figure 30: Graphic Illustration of Mu Suppression with 0 indicating no change from the baseline measure, plus value indexing a decreased activation and minus value representing increased activation.....</i>	<i>153</i>
<i>Figure 31: Number of Missing Data listed in table format (left) and represented diagrammatically by the dark shaded area of the graph (right).</i>	<i>154</i>
<i>Figure 32: Significant overall mean Mu suppression after the intervention.....</i>	<i>155</i>
<i>Figure 33: Significant mean Mu suppression group differences after the intervention.....</i>	<i>157</i>
<i>Figure 34: Significant Mu suppression variation within movement conditions before – NHS Lab</i>	<i>158</i>
<i>Figure 35: Significant Mu suppression variation within movement conditions (before) – Studio Lab</i>	<i>159</i>
<i>Figure 36: Laban Movement Analysis Effort Qualities.....</i>	<i>163</i>
<i>Figure 37: Multiple choice research questionnaire answers with reference to perceived enhancers and detractors of embodied empathy within clinical encounters.....</i>	<i>170</i>
<i>Figure 38: Perceived Enhancers of Empathic Relating - NHS Lab</i>	<i>171</i>
<i>Figure 39: Perceived Hindrances of Empathic Relating - NHS Lab.....</i>	<i>171</i>
<i>Figure 40: Perceived Enhancers of Empathic Relating - Studio Lab</i>	<i>172</i>
<i>Figure 41: Perceived Hindrances of Empathic Relating - Studio Lab.....</i>	<i>172</i>
<i>Figure 42: Summary of scaled questionnaire answers - Studio Lab and NHS Lab</i>	<i>173</i>
<i>Figure 43: Perceived adequacy of training before and after the intervention – Studio Lab.</i>	<i>173</i>
<i>Figure 44: Fieldwork Stage 2 - Development of Qualitative Findings</i>	<i>176</i>
<i>Figure 45: The Wheel of Kinaesthetic Stories</i>	<i>177</i>
<i>Figure 46: This Story is About... (performance question cards with audience member responses)</i>	<i>179</i>
<i>Figure 47: Evangelia in rehearsal. Photo by Miltos Dikaros, art work by Morgan Sinton-Hewitt.....</i>	<i>181</i>
<i>Figure 48: Geoffery in rehearsal and during the live performance (video still). Photo by Miltos Dikaros, art work by Morgan Sinton-Hewitt.....</i>	<i>186</i>
<i>Figure 49: Elizabeth in rehearsal. Photo by Miltos Dikaros, art work by Morgan Sinton-Hewitt.....</i>	<i>187</i>
<i>Figure 50: (top left) Geoffery and Mira in rehearsal and (below)Geoffery, Evangelia, Elizabeth, Mafe and Mira (being rolled on the floor) during the performance (video still). Photo by Miltos Dikaros art work by Morgan Sinton-Hewitt.....</i>	<i>193</i>
<i>Figure 51: Cross-examination of Key Interdisciplinary Research Findings.....</i>	<i>195</i>

Acknowledgements

I would like to thank the University of Roehampton, Department of Psychology, and particularly Dr Diane Bray, for entrusting me with a PhD studentship, without which I would not have had the opportunity to embark on this life-changing journey. I am indebted to my supervisors, Dr Beatrice Allegranti and Dr Jonathan Silas, for their exemplar interdisciplinary guidance throughout this investigation and for encouraging me to pay attention to the minutiae of the research process without losing sight of the bigger picture. Dr Allegranti, your writings, research and expertise in embodied intersubjectivity have been constant inspiration and support in my own work and development. Thank you for your affirming presence throughout this process. Dr Silas, your generosity, patience and guidance through the cognitive neuroscience components of my research project surpassed your supervisory role. Your infectious fascination with embodied cognition has been truly invigorating. Beyond your advisory remit as supervisors you were both my greatest supporters, believing in me when I doubted my resilience and capabilities; for this, I will be eternally grateful.

To all the NHS members of staff, dance movement psychotherapists and dance practitioners participating in this investigation, thank you for your thoughtful contributions and for joining me in this adventurous exploration of kinaesthetic empathy. I am additionally grateful to |mu| performers Geoffery Unkovich, Evangelia Kolyra, Mira Schauble, Elizabeth Casselton and Maria Fernanda Toledo for your honest and powerful embodiment of the research material in a live dance theatre context. Each of you brought a very unique understanding and perspective to the research and performance process. Also my thanks go out to the audience members of our live performance, many of whom were close friends and family members, for your enthusiastic engagement, post-show reflections and support.

I am also appreciative for the help I received by three fantastic research assistants during the EEG testing at the University of Roehampton: Morgan Sinton-Hewitt, Barbara Christians and Diana Kreiser. I am indebted to |mu| photographers George Kolyras and Milto Dikaros and visual artist Morgan Sinton-Hewitt (again) for capturing the performance material so beautifully. To Jonathan Wilson and TVR Roehampton, thank you for the lighting design and video-recording of the live performance respectively. I would also like to recognise the EEG technical support I received from Dr Paul Bretherton during my Cognitive Lab days and Dr Paul Dickerson's thoughtful and astute feedback during my PhD upgrade. I am also thankful to Dr Steve Papachristou for offering additional support with demystifying statistics.

This project would not have been possible without the support of East London NHS Foundation Trust, where part of the investigation took place. In particular, I would like to thank Dr Liz McDonald and Sasha Singh of the Mother and Baby Unit for backing this project and for working so closely with me to bring it to fruition. To Marianne Behm and Katie Williams, thank you for supporting me throughout my PhD journey (and beyond), and for your generous and understanding stance over the last four years. To my Arts Therapies colleagues: Claire Burrell, Samantha Hunt, Renato Pesci, James Cowie and Marika Cohen you are the best team I have worked with and you continue to inspire and energise me in my clinical practice.

I was very fortunate to be part of a lively research community in Whitelands College. I would like to extend a special thanks to James R, James M, Martha, Michael, Shems, Janine, Nathalie B., Nathalie P., Sarah, Nathan and Kieran for the many stimulating conversations, yoga on the grass and extended lunchtime sessions. Some of you have moved me beyond words by going out of your way to be with me during the highs and (a few considerable) lows of the PhD process (you know who you are). I am also proud to have been a co-founding member of the 'Hybrids' research group; a supportive forum for doctorate psychology students traversing many uncharted territories in our respective therapy-focused fields. Long may the 'Hybrids' legacy continue.

On a personal level, there have been a few key people who sustained me throughout this project. Penelope Best, I do not know how I would have survived this process without your holding and honest witnessing. Thank you for reminding me to 'yield' and to 'swim to the shore', when I felt trapped in the deep. Gerry Harrison, I am grateful for your warm support and encouragement over many years. My precious DMP sisters, Nanette and Davina, thank you for always being there for me, for cheering me on, and for infusing me with confidence and optimism. To my dear friend Vicki, I am grateful for your friendship and constant support in the last fifteen years. To Sissy, my comrade, thank you for your Greek passion, sincere encouragement and collaborative spirit. To my family and friends (near and far), thank you for your patience and for giving me permission to pause, when I needed to step out of the research process. To my beloved parents, Eleni and Ioannis, thank you for your quiet and unconditional presence in my life and for always supporting my choices. My dear sisters Melita, Margarita and Elena, you have shaped who I have become. Phillipa and Robert, I will always be grateful to you for giving me a second home and, with that, an alternative perspective to life, during the most formative years of my development.

Finally and most importantly, I wish to thank my best friend, my rock, my husband Spyros. I would not have been able to immerse myself in this (very intense) work without your abundant understanding, confidence and positivity. Your love, energy, playfulness and rational thinking have kept me sane all these years. And to my son Yannis, who 'walked' the final steps of this journey with me, thank you for arriving into my life ☸.

This thesis is dedicated to the memory of Alistair McCuaig (Senior NHS Mental Health Nurse, colleague and friend) and Greg Vamvakas (wonderful pianist, composer and friend) - both great Teachers in compassion and generosity, who unwittingly influenced the nascent ideas behind this research project.

Abbreviations

ANOVA	Analysis of Variance
BESA	Brain Electrical Source Analysis
CPA	Care Plan Approach
CPD	Continuous Professional Development
CQC	Care Quality Commission
DMP	Dance Movement Psychotherapy
DSM V	Diagnostic and Statistical Manual of Mental Disorders
EEG	Electroencephalography
EEP	Empirical Existential Phenomenology
EGI	Electrical Geodesics, Inc
FFT	Fast Fourier Transform
KE	Kinaesthetic Empathy
KMP	Kestenberg Movement Profile
LMA	Laban Movement Analysis
MDT	Multi-disciplinary Team
MN	Mirror Neuron(s)
MNS	Mirror Neuron System
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
PbR	Payment by Results
ST	Simulation Theory
ToM	Theory of Mind
TT	Theory Theory

Transcriptions and conventions

All research participant quotes appear in *italic format*.

Research participants have been anonymised throughout the text for the purposes of confidentiality, with the exception of |mu| performers who chose to use their name across the written and visual (video, photography and live performance) dissemination of findings.

Where clinical material appears in the text, pseudonyms have been used. All clinical details discussed have been altered to ensure clients' confidentiality.

A video recording of the live dance theatre performance |mu| is submitted in DVD format and attached to the appendices volume.

For full appendices to this thesis see separate volume.

Chapter One: Introduction

The body isn't a thing, it's an event. We exist by happening.

Guy Claxton, 2015, p. 36

This research project begins with a paradox found in the combination of terms put together to form its title: *Embodying Kinaesthetic Empathy*. The contradiction emerges from the implied (inter)relationship among these terms without which an assumed duality may be inferred. Yet, as this thesis intends to demonstrate, not only are these terms interrelated but, arguably, constitute integral components of one another. To this end, embodiment is implicated in kinaesthesia as well as our (inter)relational empathic responses. Kinaesthesia is, by definition, situated in the (moving) body and our understandings of others and/in the world. Empathy is realised as an embodied (kinaesthetic) and relational experience. My intention in framing my research in terms of 'embodiment', 'kinaesthesia' and 'empathy' is threefold. Firstly, I am interested in delving into these loaded clinical terms (sometimes found in literature separately, sometimes found conflated) utilised extensively within my field of practice, Dance Movement Psychotherapy (DMP). This investigation makes specific reference to the implications of embodied empathy within the therapeutic relationship, with consideration to relevant clinical interventions and applications. Secondly, in this research project, the concepts of 'empathy', 'embodiment' and 'kinaesthesia' are reviewed through applied interdisciplinary methodology, informed by dance movement psychotherapy, phenomenology and cognitive neuroscience, thus *embodying* theoretical, practice-based and experimental understandings towards knowledge production. Thirdly, my thesis grapples with theoretical and practical tensions found within the visible and invisible (Merleau-Ponty, 1968) processes implicated in human (embodied) interrelatedness (within clinical contexts), thus troubling engendered taken-for-granted notions of embodied empathy.

I begin this exposition with an introduction to the background story of this investigation including an overview of what precipitated this endeavour. I then offer an outline of the project rationale, including the guiding research questions informing this study and my interchangeable voices and positions found within the text. Finally, this introductory chapter concludes with an overview of the research structure setting the scene for the unfolding thesis.

1.1 Background

A driving force behind this investigation of embodied empathy is my clinical practice as a dance movement psychotherapist and member of multi-disciplinary teams in both National Health Service (NHS) and community settings. As an arts therapist my clinical encounters manifest in a relational, embodied, and creative context. The motivation to investigate embodied empathy developed during my work with older adults, specifically those living with dementia in continuing care. Over a period of seven years I explored creative, relational and embodied psychotherapeutic approaches in order to reach clients, often in advanced stages of dementia and Alzheimer's disease, who suffered extreme physical, emotional, mental and cognitive deterioration. Focusing my attention to all the subtle nuances of non-verbal and verbal expression, the interplay in communication between healthcare professionals, clients and their families, the impact of the environment onto the individual and vice versa and the untold stories unfolding in between these spaces, opened for me a new window of understanding an other's lived experience in the world. As well as noticing moments of interconnectedness, between care givers and residents, I was struck by the impact the absence of empathic relating had on the clients and, indeed, myself. Being a member of an over-stretched and under-staffed multi-disciplinary team, with limited resources, within an oversubscribed unit of highly dependent clients, I witnessed the strain on compassion and empathy, for both clients and clinicians, at first hand. During my time working in the continuing care settings, I became interested in the ways in which dance theatre performance could bring one closer to the lived experience of dementia. As a result, I developed an independent performance study entitled *De Mentis: Silent Stories* (2010-2011), in collaboration with a group of local dance artists and therapists. In the following excerpt a *De Mentis* performer explains how embodied practice helped her develop an understanding of what living with dementia might be like:

Being part of Silent Stories has given me a feeling of empathy towards those who have dementia, an understanding through my own body what it might feel like to live with dementia every day. Particularly prevalent for me was the sense of distance I felt when in character. As a performer you usually have a very centred feeling of character and self, you know where one ends and the other begins. In Silent Stories there was a blur between the two, because we did everything as ourselves, we never tried to 'act' as though we had dementia but rather we lived

what dementia meant for us. The distance I felt from the world around me, from my fellow performers on stage, was not a created distance or an active character motive, but rather a reality, an honest response of exploring dementia through my lived experience. I felt very lonely and misunderstood. It was this sense of reality that made the work so exhilarating for me. Nothing felt contrived or 'enacted', everything was a reflection of what I felt on a very personal level, something that was both at once brilliant and a little scary!

Victoria Pipe, 2011



Figure 1: *De Mentis* preview at the 1st National Dance & Dementia Conference, 2010 (photo by Eric Foxley, Performance by Evangelia Kolyra, George Tsagdis & Tasha Colbert, Artistic Direction by Marina Rova).

Victoria's reflection suggests that exploring dementia at a felt level (Gendlin, 2003) gave her an empathic understanding of *what it might feel like to live with dementia every day*. Notably, Victoria came from a dance and performance background and had no prior (clinical) experience of working with this population, throughout her participation in the project. Interestingly, a similar response was echoed by an audience member who processed the performance material from a spectator's position:

I was completely transported into the world of the elderly and dementia. Every so often I found that I was reminding myself that you were young performers who were embodying the strange behaviours of the elderly mentally ill, with such subtle accuracy, and not the actual elderly themselves... Each performer in his/her own way conveyed something so real and the duet vignettes and group sequences were sometimes touching, sometimes very scary, sometimes hopeful and sometimes overwhelmingly distressing...

De Mentis audience member, 2011

At the end of the nine month process of *De Mentis* I emerged from a moving and rewarding journey confirming what I already ‘knew’: The possibilities in engaging and learning through embodied practice are endless and valuable. However, at the end of the project I found myself stirred by many more questions and curiosities. How does the meeting between two (or more) lived experiences manifest? How do we (therapists and clients) perceive through our moving bodies? How do kinaesthetic experiences shape our relational understandings mentally, physically and affectively? These curiosities formed the guiding research questions of my doctorate project into kinaesthetic empathy. After receiving a full research studentship (2012), from the Centre for Arts Therapies Research at the University of Roehampton (Department of Psychology), the investigative process began.

The dialogic interplay between performer and audience member, illustrated in the quotes above, involves different layers of information: the implicit or pre-reflective (Merleau-Ponty, 2008) and explicit or social narrative processing (Gallese, 2014) co-created by and in relationship. There are different ways of understanding another. The question, being asked in recent years, is whether the process of understanding is affect driven or cognitively instigated, or indeed both. Social and cognitive neuroscientists continue to debate over “the problem of other minds” (Gallese, 2014) with Theory Theory (mentalisation) or top-down information processing and Simulation Theory (mirroring) or bottom-up information processing as the dominant opposite ends of the spectrum (Decety & Lamm, 2006; Siegel, 2010). What about the role of embodiment in our empathic understanding of others? Embodied practice, such as the performance study mentioned above, reminds us that affect and cognition are inevitably both rooted in the body. The dance theatre performance of *De Mentis*, arguably, created a possibility of resonance (Siegel, 2010) in both the performer and the viewer, with the lived experience of dementia, thus enabling a bridge of understanding to develop (Coaten, 2009). Author Siri Hustvedt (2013) says of pioneer choreographer’s Pina Bausch powerful dance theatre work: “The viewer’s emotion is born of a profound recognition of himself in the story that is being played out onstage before him. He engages in a participatory, embodied mirroring relation with the dancers, which evades articulation in language” (The Criterion Collection).

This ‘participatory embodied mirroring relation’ that Hustvedt describes is evident in many guises in our life experience and human development. In cognitive neuroscience, over the last decade, numerous studies exploring the mirror neuron system (MNS) in the brain have advanced our understanding of the role of embodiment in empathy (Jola, 2012; Silas et

al., 2012; Rizzolatti & Sinigaglia, 2006; Gallese, 2003). Thus, I am interested in the potential discourses arising from combining embodied practice (dance movement psychotherapy) and cognitive neuroscience (using electroencephalography; EEG) in unpacking embodied (inter)relatedness informed by a phenomenological framework. One could question the choice of EEG as the unlikely partner for DMP in this investigation of embodied empathy. I am reminded here, of Vittorio Gallese's (2014) statement during his presentation at a recent conference about "finding the body in the brain". Building on this it could be suggested that this study starts at the other end (notwithstanding the potential dualism implied by this differentiation), by looking for the brain (and not only) in the body. More accurately, this investigation aims to explore "the eco-socio-embodied systems that we are" (Claxton, 2015, p. 9) through the reunification of mind, brain and body into such concepts as the body-brain (Claxton, 2015). Neuro-imaging technologies such as the EEG may be utilised to reveal non-observable aspects of our embodied mind. Phenomenology, the field dedicated to the study of human experience, offers an additional perceptual lens in my investigation of kinaesthetic empathy. In essence, this study addresses embodied discourses within clinical encounters from a non-dualist perspective as opposed to the potential marginalisation of the body as established by current medical models (Knight & Bradfield, 2003).

1.2 Motivation for this Research

This study specifically builds on current advances in the fields of dance movement psychotherapy (DMP) and cognitive neuroscience concerned with embodied relational investigations. Kinaesthetic empathy, literally meaning 'feeling with' (through a) 'movement sense', is a core theoretical and practical approach in DMP (Meekums, 2012; Payne & Samaritter, 2013). Theorisation of (and research into) key DMP concepts, such as kinaesthetic intersubjectivity, is still in development (Allegranti, 2015; 2013). This thesis elucidates the inherent complexities in investigating moving bodies in relationship and considers kinaesthetic empathy as an intersubjective phenomenon within a clinical context. A particular focus in this project is on unpicking healthcare practitioners' experiences and understandings of their kinaesthetic relational interactions. Further this interdisciplinary study cultivates a dialogue between artistic (dance theatre performance work), clinical (embodied

practice drawing from DMP), scientific (EEG) and philosophical (phenomenology) perspectives in order to explore kinaesthetic empathy.

A new wave of performance artists (Nunes Tucker & Price, 2010; Willson, 2014) have recently introduced performance approaches within medical and healthcare settings promoting compassion, communication and relationship building between healthcare workers and patients (Winship, 2014). Ironically, dance movement psychotherapists have practiced within clinical settings for decades, however are still struggling with (in)visibility within the wider public domain and awareness. Willson and her company, Clod Ensemble, have developed Performing Medicine, a project embedding performing arts techniques such as movement improvisation, touch and non-verbal communication, within traditional medical training (Winship, 2014). Similarly, in this study, I am interested in clinicians' perceptions and experiences of the influence of embodied practice in their clinical work and therapeutic encounters.

Two groups of participants with varied (prior) experience in embodied practice (Studio Lab and NHS Lab) were recruited for the data collection process. The fieldwork included (i) a series of Embodied Practice Focus Groups (intervention), (ii) EEG experimentation (before and after the intervention) and (iii) completion of a research questionnaire (before and after the intervention). The Studio Lab group (experienced mover group) additionally participated in the composition and delivery of a live dance theatre performance exploring emerging thematic understandings of kinaesthetic empathy within an artistic context. Participants' overall accounts of empathic (inter)relating, as experienced during the Embodied Practice Focus Groups, EEG experimentation and performance work, informed the formulation of kinaesthetic empathy outlined in this investigation.

Co-researchers' implicit and explicit experiences and understandings of kinaesthetic empathy are illuminated in this thesis through the interwoven discourses of embodied practice, neuroimaging (EEG) and phenomenological accounts developed in the upcoming chapters. Using a mix of qualitative and quantitative methods, the collected data were analysed in a systematic way towards further theorising and evidencing emerging concepts involved in kinaesthetic empathy. Moreover, this investigation considers the underlying brain mechanisms associated with embodied processing and relates these to core DMP and phenomenological principles.

The multiple perspectives employed in this investigation, are reflected in the author's embodied choices and voices (Best, 2005) demonstrable throughout the text. My first person perspective draws from my professional role as a dance movement psychotherapist as well as my experiential psycho-physical understandings, as a mover and choreographer, shaped within specific socio-political locales. In addition, a second-person position will be manifest through research participants' life-word accounts derived through the data collection. Finally, theoretical and experimental understandings will also be related to the formulation of this thesis taking on a broader view of the emerging findings and discourses. Subsequently, it may be suggested that the text itself becomes an *embodiment* of the different methodological approaches, utilised in this research project, straddling commonalities, diversions and meeting points between the different lenses.

1.3 Structure of the thesis

So far, this introductory chapter has outlined the relevant background information to the research project clarifying the author's motivation and different voices as researcher, clinician and choreographer. Following is an overview of the structure of the thesis, which reveals the different developmental stages of the investigative process.

Key theoretical underpinnings informing this investigation are presented in an extensive literature review (Chapter 2: Literature Review, pp. 24-46) drawing from existing theory, research and advanced understandings of embodied empathy within the fields of dance movement psychotherapy, cognitive neuroscience and phenomenology. The essential definition of core research concepts (intersubjectivity, kinaesthetic embodiment and empathy) is followed by a theoretical review of the three fields shaping this investigation, namely dance movement psychotherapy, phenomenology and cognitive neuroscience. Specifically, theories and research studies developing concepts of kinaesthetic empathy via a connection to the mirror neuron system and embodied practice (Allegranti & Silas, 2014; Jola et al, 2012; Gallese, 2009) are particularly considered as important to the formulation of this research project.

Decisions about the ontological and epistemological framework are discussed as part of the methodological orientation of the research project. Specifically the interdisciplinary design of this work is unpacked to reveal how qualitative, quantitative and embodied

discourses may co-exist, collaborate and reciprocally inform the formulation of the research thesis (Jola et al, 2012), whilst acknowledging the tensions arising therein. Drawing from typical cognitive neuroscience (experimentation), dance movement psychotherapy (embodied practice) and phenomenological (lived experience accounts) methodologies, a thorough description of the philosophical and research design foundations of the investigation is presented in Chapter 3: Interdisciplinary Methodology (pp.47-57)

In turn, the ‘methods’ chapter (Chapter 4: Interdisciplinary Methods, pp.58-83) outlines the practical steps taken as part of the data production and analysis for *Fieldwork Stage 1* and *Fieldwork Stage 2*, ethical considerations involved in the project as well as a detailed description of the research design.

Chapter 5: Embodied Words (pp. 84-138) presents the qualitative findings emerging from *Fieldwork Stage 1* including a qualitative analysis of the focus group discussions using empirical existential phenomenology (EEP) and a thematic analysis of the qualitative components of the research questionnaire. Following rigorous engagement with research participants’ ‘embodied words’, six broad concepts of kinaesthetic empathy (KE) were developed: (i) Kinetic Attunement, (ii) Familiarity, (iii) Intersubjectivity, (iv) Socio-political Dynamics, (v) Embodied Knowing and (vi) Mirroring. These categories represent the constituent overarching conceptualisations of kinaesthetic empathy as observed within both research groups (NHS and Studio Labs). Each concept of kinaesthetic empathy further encompasses related subthemes analysed extensively via a combination of co-researchers’ accounts and theoretical underpinnings. Participants’ conceptualisations of embodied empathy captured within the research questionnaire are categorised in five areas: (i) definitions of empathy, (ii) empathy and the therapeutic relationship, (iii) empathy and non-verbal communication, (iv) manifestations of empathy within the therapeutic relationship and (v) embodied learning within the research study.

The quantitative findings of Fieldwork Stage 1: Data Collection are presented in Chapter 6: Embodied Numbers (pp. 139-173). The complete experimental study is presented (6.1 EEG Study pp.139-167) followed by the quantitative findings of the research questionnaire (6.2. Research Questionnaire - quantitative components pp.168-173). EEG measures of motor cortex activation are examined during movement processing pre and post the embodied practice intervention. Within and between statistical comparisons in relation to the EEG findings are also presented in this chapter. The quantitative findings of the research

questionnaire explore potential shifts in participants' perceptions of kinaesthetic empathy before and after completion of the embodied practice programme (intervention).

Chapter 7: Kinaesthetic Stories (pp. 174-192) explores the embodied discourse of the investigation as developed during the dance theatre performance work in *Fieldwork Stage 2*. Four broad themes of kinaesthetic empathy emerging within an artistic performance context (following a series of performance workshops and culminating with a live dance theatre performance) are elucidated in this chapter through performer and audience member accounts of kinaesthetic empathy. These themes are: (i) the knowing body, (ii) the performance journey, (iii) inter-connectedness and (iv) being moved. The research performance is contextualised as a possible means for fostering kinaesthetic dialogue within artistic contexts, highlighting relevant implications for clinical practice (Allegranti, 2015).

In Chapter 8: Interdisciplinary Discussion (pp. 193-218) a broad perspective of the research findings is assumed drawing attention to emerging interdisciplinary formulations of kinaesthetic empathy within clinical contexts. The emerging interdisciplinary discourse is arranged in six corresponding sections: (i) Kinaesthetic Empathy: Innate Capacity and Acquired Knowledge, (ii) The Dancing Body: Psychotherapy and Performance Intersections, (iii) Embodied Reflexivity: MODEs of interaction, (iv) Minding the (moving) body, (v) To 'Empathise' or Not to 'Empathise'? That Is The Question and (vi) Interdisciplinary Investigation: Treasures and Pitfalls. By drawing on the connections between dance movement psychotherapy, cognitive neuroscience and phenomenology this chapter articulates the complexities but also the possibilities emerging through interdisciplinary practice and research.

The thesis concludes (Chapter 9: Conclusion pp.219-222) with a summary of the research project. Gaps found in the investigation are discussed and further recommendations of areas for future consideration by researchers and practitioners in the field are made. Drawing from the outcomes of this research project, and the lessons learnt along the way, this work joins the calls for bridging art-science collaborations within social and clinical investigations of (embodied) human experiences.

Chapter Two: Literature Review

This chapter offers an appraisal of developing (and developed) theory informing this investigation of kinaesthetic empathy, drawing from relevant research and advances in the fields of dance movement psychotherapy (DMP), cognitive neuroscience and phenomenology. I begin by reviewing three core concepts guiding this research project: (i) intersubjectivity, (ii) kinaesthetic embodiment and (iii) empathy. Given that these terms come with multiple interpretations, definitions and applications, their ontological and empirical make up will be examined according to three different perspectives: clinical, philosophical and scientific. Even though, I will unpack each term separately, it will soon become apparent that such differentiation is in fact not an accurate representation of their interrelationship in this investigation. These three concepts of embodied ‘knowing’ and ‘(inter)relating’ become interwoven and mutually constructed through embodied practice and language. For the purposes of elaboration, I consider this separating out of concepts, in this chapter, as analogous to the use of a photographic lens; in turn bringing into focus a different aspect of a bigger picture. In the second part of this theoretical chapter, dance movement psychotherapy, cognitive neuroscience and phenomenology are contextualised as the three interdisciplinary fields of this project’s topography. The theoretical underpinnings introduced in this chapter inform the methodological framework and design of the study (see Chapter 3: Interdisciplinary Methodology pp. 47-57) and further support the analysis and formulation of the fieldwork findings (see Chapters 5, 6 and 7 pp. 84-192).

2.1 Definition of key terms

The three theoretical concepts discussed in this section, namely ‘intersubjectivity’, ‘kinaesthetic embodiment’ and ‘empathy’, inform the multiple strata of this investigation of kinaesthetic empathy and as such, contextualising their use in this thesis is essential. Firstly *intersubjectivity* is considered in phenomenological terms as the embodied and relational field within which lived experience manifests. *Kinaesthetic embodiment* explores theorisations of the moving body. Finally, *empathy* is discussed incorporating embodied and cognitive perspectives in the quest of understanding others.

2.1.1 Intersubjectivity

The issue of alterity (or our relationship with others and the world) is extensively theorised within phenomenological philosophy (Merleau-Ponty, 1945; 1968; Levinas, 1995; Csordas, 2008) and its evolutions within feminist phenomenology (Allegranti, 2015; Butler, 2004; 2007; Grosz, 1994). I contextualise the intersubjective field in Merleau-Pontian terms by viewing the subject as a body-subject, and therefore its permeations with self, other and the world as existing within the intercorporeal realm (Diprose & Reynolds, 2008). According to Merleau-Ponty “our encounter with others is not a matter of mind and reasoning to find another ‘behind’ behaviour, but is a matter of one body recognising another” (Bush, 2008, p.38). A further implication of contextualising experience within the intersubjective field involves the notion of performativity of the embodied self as co-created in reciprocal interaction with others as Allegranti (2009, p. 28) explains: “We continually reconfigure our subjectivities throughout our lives as, for example, when a major event occurs like birth, death or illness. But we also reconfigure in everyday interactions and relationships that shape and re-shape us physically, emotionally and mentally”. This concept of performativity is distinct from the notion of performance in that it relates to the process of *iteration* (Allegranti, 2015), the repeated embodiment of our subjectivity in reciprocal interaction with others and the environment. The notion of reciprocity is theorised extensively within developmental views of intersubjectivity, particularly around the proto-conversations of infants with their primary carers and their innate ability to initiate and build on dialogic relationships with adults (Trevarthen, 2013). In their review of developmental intersubjectivity theory Rochat et al (2009) make an important distinction between mirroring and reciprocity:

[...] mirroring processes are necessary, but not sufficient, to account for the early development of reciprocal exchanges that takes place from the second month on. Imitation and emotional contagion, taken literally as close-loop automatic mirror systems, are soon transformed into dynamic, ultimately creative exchanges that take the form of open-ended protoconversations ruled by principles of reciprocation, and develops as negotiation and mutual recognition.

pp. 173 -190

The intersubjective concepts of reciprocity, negotiation and mutual recognition are investigated throughout this practice-based project, including embodied and relational interactions explored through electroencephalographic (EEG) measurements, ‘embodied

practice focus groups’ and a live dance theatre performance (see *Interdisciplinary Methodology* pp. 47-57 and *Interdisciplinary Methods* pp. 58-83).

Gallese frames intersubjectivity as a unified, common and we-centric space (Gallese, 2003). A proponent of ‘simulation theory’ (see further elaboration under *empathy* pp. 31-35), Gallese (2003) suggests that the shared intersubjective space enables the establishment of “a meaningful embodied interindividual link...[via] a mirror neuron matching mechanism” (p.176). He goes on to develop his ‘shared manifold hypothesis’ as the means by which “intersubjective communication, social imitation and ascription of intentionality become possible” (Gallese, 2003, p.177). In his analysis of his ‘shared manifold hypothesis’ Gallese outlines three levels of ‘operationalization’ namely: (i) a phenomenological level (notion of similarity with others), (ii) a functional level (‘as if modes of interaction’) and (iii) a subpersonal level (activity of mirror matching neural circuits) (Gallese, 2003). However, Gallagher (2008), among others, has criticised simulation theory on the basis that perception is considered as a third-person observation (that is an observation of the other person) rather than a direct enactive process in relationship. In other words, simulation theory implies that perception is possible because of innate cognitive mechanisms, a view challenged by Gallagher’s (2008) theorisation of ‘direct perception’:

[I]n ordinary instances of interaction with others, I am not in the observer position; I am not off to the side thinking or trying to figure out what they are doing. Rather, I am responding to them in an embodied way. What we call social cognition is often nothing more than social interaction. What I perceive in these cases does not constitute something short of understanding. Rather my understanding of the other person is constituted within the perception–action loops that define the various things that I am doing with or in response to others.

p. 540

The problem of ‘other minds’ (Gallese, 2014), or the ability to recognise others’ internal states, thus becomes obsolete for Gallagher (2008) who maintains that direct perception allows us to understand and relate to others through non-verbal cues (expressions, gestures and purposive movement), which among others communicate our intentions and emotions. Direct perception may be further elucidated through the intersubjective practice of dance movement psychotherapy. Samaritner and Payne (2013) align themselves with Gallagher’s theorisation and suggest that this enactive process of understanding others’ mental or emotional states is made possible because of our embodied, kinaesthetic

experiences. They go on to demonstrate how the mirroring intervention, used extensively in DMP offers, what they term as, a shared movement situation:

In this corporeal relationship the therapist initially connects with the patient's movement patterns, mirroring them with highly attuned movement patterns.[...] The therapist may support the patient's kinaesthetic, direct perception of the dance by offering, through her movement, changes in the kinetic qualities such as a shift of rhythm or movement direction, change of spatial position or use of weight.

Samaritter & Payne, 2013, pp. 146-147

However, DMP's intersubjective framework is not to be taken for granted. Intersubjectivity is still, surprisingly, a developing theorisation in the field as are phenomenologically informed concepts of embodiment and kinaesthetic empathy. Even though such embodied concepts are extensively developed and practiced clinically and experientially they are not readily theorised within the literature of DMP (Rova, 2009). Although in recent years, there has been evident engagement with research and knowledge production in the field, I echo Allegranti's call for the need to "interrogate the ontological status of our disciplines and how we conceptualise bodies" (Allegranti, 2013, p. 402). Building on Barad's (2003) posthumanist work, Allegranti (2013) conceptualises intersubjectivity as a material discursive process; thus recognising bodies and language as mutually co-constructed, in reciprocal intra-action (simultaneously being within and part of relational and broader socio-political contexts). Allegranti's contribution to DMP theorisation (2015; 2013; 2009) informed by feminist, artistic and scientific interdisciplinary research, makes further implications about "both therapists' and clients' capacities for understanding what the living of an ethical life might mean" (p. 402). This is not unlike Sanders' (2008) description of 'ethical action' in considering our corporeal existence in the world:

An awareness of this dimension of intersubjectivity could, in particular, highlight the need to alter the bodily styles of our practices in some morally relevant contexts, such as those encompassed by social concerns, institutions and our relations with others that a focus on normative rules and concepts or an emphasis on discourse alone fails to address.

pp. 150-151

Sanders' rationale directly informs this investigation of embodied practice within clinical contexts particularly attending to practitioners' perceptions and experiences of inter-relating with their clients' lived experiences. Conceptualising kinaesthetic empathy as an intersubjective phenomenon within clinical encounters further contributes to developing

theorisations of key DMP practices. A further contribution of this study involves investigating embodied practice as ethical action (Sanders, 2008) by re-humanising the potentially objectified bodily experience (medical model) of the patient, and clinician for that matter, within the clinical relationship.

Relevant to the notion of intersubjectivity as a fertile ground for establishing therapeutic relationships, is the psychopathology of some client groups presenting with non-typical interpersonal skills – namely clients with psychotic disorders, autism or cognitive impairment (DSM V). Given that intersubjective relating is an intentional and selective embodied stance that needs to be learned and cultivated in practice (Fischman, 2006), applying the concept within some clinical contexts raises the question of bi-directionality. As Gallese (2003) explains: “A disruption of the multilevel simulation processes characterising the shared manifold might be a possible cause of ‘defective attunement’, or of a ‘lack of common sense’ in schizophrenic patients” [author’s emphasis] (p. 178). Autistic spectrum disorders are also characterised by deficits in communication, social skills and empathy among others (Oberman et al, 2005). To this end Samaritter and Payne (2013) explain how in DMP the therapist is able to mobilise the patient’s atypical self-organisation or self-regulation:

During the one-sided intentionality from the therapist towards the patient, the aim is to bring about bodily based change in intention and attention. The patient is offered a visual and acoustic impression of her/his personal movement material through the attuned movement intervention of the therapist, whilst at the same time s/he is experiencing her/his own movements through the kinaesthetic senses.

p. 146

It may be argued, therefore, that in meeting the client at the non-verbal or embodied level the dance movement psychotherapist cultivates the patient’s intersubjective skills, where there may be a disruption due to bio-psycho-social factors. Stern (2010) describes intersubjectivity as the sharing of another’s experience. He further contends that the “sharing of another’s vitality forms is probably the earliest, easiest, and most direct path into another’s subjective experience” (Stern, 2010, p. 43). Stern’s (2010) use of the term ‘vitality’ refers to the primary role of movement in creating form, meaning and connections with self and other. This inherently embodied level from which movement emerges, also a starting point within the DMP process, is further expounded below in the context of *kinaesthetic embodiment*, a core concept in this investigation of moving relational bodies.

2.1.2 Kinaesthetic embodiment

Kinaesthesia derives from the Greek words 'kinein' [κίνηση] movement and 'aesthesia' [αἴσθησις] sense, therefore may be described as the 'movement sense' or the process of sensing through movement. Kinaesthesia thus refers to our proprioceptive sense making situated in relationship (Samaritter & Payne, 2013; Gallagher, 2007). In this study, I am specifically exploring embodied practice as a way of supporting and/or developing clinicians' embodied (kinaesthetic) understandings within their clinical encounters. Kinaesthetic embodiment is viewed as an intersubjective phenomenon (Allegranti, 2013) with an emphasis on the bi-directional process within which it is co-constituted (Finlay, 2006). Kinaesthesia is explored in practice through relational movement improvisation and performance. Outcomes of this investigation include phenomenological analyses of participants' experiences of kinaesthetic interactions and a measure of motor cortex activation (using EEG) during movement exploration over time. A possible criticism of the approach adopted by cognitive neuroscience may be that it is lacking in a focus of the bi-directional process of embodied relating. This potential self-other divide, is addressed in this investigation experimentally by introducing live embodied interaction during the EEG testing as well as a 'dialogic' interaction condition further supported by Gallagher's direct perception theorisation (2008) (see Chapter 3: Interdisciplinary Methodology p and Chapter 4: Interdisciplinary Methods pp.58-83).

Definitions of embodiment are ambiguous due to the different perspectives by which they are conceptualised i.e. biological, psychological, political etc. Broadly speaking, DMP as well as wider psychotherapeutic and psychological texts tend to view 'embodiment' in 'body-mind integration' terms. A potential non-dualist conceptualisation of embodiment may be found in Nightingale and Cromby's (1999) phenomenological description: "...to be within a body...not a biological vessel within which a separate 'person' [authors' emphasis] resides but as a fundamental component of personhood. To be a person is always to be an embodied person" (p. 226). Rather than taking embodiment for granted, Cromby and Nightingale underline the inseparability between embodiment and personhood in the way that Merleau-Ponty (1945) considers the subject as a body-subject. In her interdisciplinary analysis drawing from psychotherapeutic, feminist and performance methodologies Allegranti (2015) explicates embodied experience as autobiographical, relational and political. Allegranti's theorisation of the moving body draws our attention to potential blind

spots or taken-for-granted attitudes in the practice and training of DMP, engendered by the elusive definitions of embodiment in the field. In this sense, a working definition of kinaesthetic empathy as an intersubjective phenomenon examined from embodied and cognitive perspectives is a response to this call to contribute to discourse about the complex implicit and explicit workings of the moving body in relationship.

As Damasio (1994) postulates in his ‘somatic marker hypothesis’, “(t)he mind had to be first about the body, or it could not have been” (xvi). Damasio’s assumption, a response to Cartesian dualism, conceives body and emotions as central to our perceptions of and relationships with others (and the world), including our decision making processes:

The organism constituted by the brain-body partnership interacts with the environment as an ensemble, the interaction being of neither the body nor the brain alone. But complex organisms such as ours do more than just interact, more than merely generate the spontaneous or reactive external responses known collectively as behavior. They also generate internal responses, some of which constitute images (visual, auditory, somatosensory, and so on), which I postulate as the basis for mind.

1994, pp. 88 - 89

Neuroscientific views of embodiment, specifically informing this investigation of kinaesthetic empathy, include ‘embodied simulation’ (Gallese, 2003; 2004) and ‘embodied enactment’ (Gallagher, 2008). Both simulation theory (concerned with neuronal representations underpinning our perceptions of and interactions with others) and Gallagher’s direct perception theorisation (of immediate embodied knowing arising in relationship) are situated within an intersubjective field as explained below:

[T]here are specific neurophysiological processes that can account for this intercorporeality, understood as a body-schematic reverberation that depends on the close intermodal connections between visual perception, kinaesthetic-proprioception and motor behaviour.

Gallagher, 2007, p.287

Building on Gallagher’s view, neuroscientific aspects of embodiment in this thesis are considered alongside embodied practice and phenomenological accounts, towards further illuminating the inherently interconnected processes of body, brain and mind.

Interdisciplinary models rigorously investigating intersubjectivity (Allegranti, 2015) and kinaesthetic empathy (Jola et al., 2012) advocate flexibility (in shifting between perspectives and their corresponding methods), ownership (of authoritative positioning) and

transparency (of methodological strengths and limitations). To this end, the embodied knowledge production of this study is informed by: the researcher's body (reflecting on and shifting between different positions, i.e. clinician, researcher, mover and choreographer); the participants' bodies (lived experience verbal and non-verbal accounts); the intersubjective body (bodies in relationship captured through phenomenological, neuroscientific and performance methods); and, the moving body as discourse (the broader subject area).

Kinaesthetic embodiment has been described as bodily-kinaesthetic intelligence, the “deepest, oldest, most fundamental and most important intelligence” (Claxton, 2015, p.9) that we possess. Through his *Intelligence in the Flesh* theorisation, Claxton proposes that we consider embodied intelligence not just as a mere function of our human organism but as the formative context through which we exist and shape our world:

The way we think about intelligence is built into the social structures we create – religion, medicine, government, as well as law and education – so a shift in our view of mind has repercussions not only for individual identity but for public life as well.

Claxton, 2015, p.11

Claxton's analysis makes the fundamental point that as humans we are inherently built for movement and that the way we perceive the world (and others) directly informs our actions. Building on this view, and through this investigation, I argue that the more aware (observing) we are of our own embodied affordances, the more receptive in recognising (seeing) others we become. This ‘seeing’ and ‘understanding’ of others is conceptualised as *empathy* to which I now turn as the third key concept underpinning this research project.

2.1.3 Empathy

The ‘problem’ of empathy (that is pinning the phenomenon of empathy down scientifically or philosophically), is a complex and multi-layered one. Empathy is considered to be the ground for psychotherapeutic process, yet as a term it bears multiple definitions and interpretations. Over the last century empathy as a term has appeared in aesthetics, arts, psychological, philosophical, sociological and anthropological texts with multiple meanings and interpretations. Empathy or ‘*einfühlung*’ (feeling into something) was first coined by German philosopher Robert Vischer in 1873 as part of his doctoral thesis on aesthetics and was used as a tool for appreciating and interpreting works of art (Singer & Lamm, 2009). Later, Carl Rogers (1951; 2003) developed his ‘unconditional positive regard’ notion of

empathy within person-centred psychotherapy. Developmental interpretations contextualise empathy as attunement (Stern, 1984), emotional availability (Gerhardt, 2004) or resonance (Siegel, 2010). Broadly speaking empathy refers to “the capacity to understand and respond to the unique affective experiences of another person” (Decety & Jackson, 2006, p.54).

Batson (2011) outlines eight different concepts of empathy categorised according to notions of ‘knowing’, ‘adopting’, ‘feeling as’, ‘intuiting’, ‘perspective taking’, ‘role-taking’, ‘feeling distress’ and ‘feeling for’ another person’s mental and emotional states (pp. 3-8). Other theorists locate the phenomenon within contexts of ‘automaticity of imitation’ or ‘cognition’ (van Baaren et al, 2011, p. 31-39). And then there are the concepts of ‘affect’ (Reynolds, 2012), ‘emotional contagion’ (Hatfield et al, 2011) and the ‘neuronal correlates’ (Pfeifer and Dapretto, 2011) implicated in our experience of empathy. For the scope of this investigation, empathy concentrates on kinaesthetic intersubjective relating or else described as “the shared movement” within the DMP context (Meekums, 2012, p. 54). This investigation considers what Dekeyser et al (2011) describe as a dialogical body-oriented perspective. Dekeyser et al explain that empathy within psychotherapy needs to be contextualised as a dialogic and embodied understanding “drawing on one’s body as a source of empathy” (Dekeyser et al, 2011, p. 120). They go on to suggest that: “The dialogical, body-oriented perspective on therapeutic empathy is at the same time both more grounded in lived experience and better located in a wider human context of relationships and social interaction” (Dekeyser et al, 2011, p. 120). I would reframe this statement to include intersubjective movement reciprocity as the continuum (Rabinowitch et al, 2012) within which kinaesthetic empathy is possible.

Two dominant neuroscientific theories of empathy include ‘simulation theory’ (ST) and ‘theory theory’ (TT). Simulation theory posits that we understand the mental and emotional experiences of others by internally simulating these experiences in our own mind, in effect putting ourselves in the other person’s shoes. Mirror neuron theory of ‘shared circuit’ activations in self and other (Gallese, 2003) is seen as evidence for simulation theory. On the other hand, ‘theory theory’ suggests that the process of understanding others involves a controlled cognitive process of perspective taking known as mentalisation (Saxe, 2005; Saxe et al, 2006). It may be said that simulation theory implies an ‘automatic’ or intuitive affective experience within our intersubjective encounters, whereas theory theory relates to a cognitive mechanism of processing other people’s experiences as separate to our own. Since our brains are 'soft wired' to represent, understand and react to the internal mental states of

others (Ramson & Lieberman, 2008), a possible hypothesis regarding the manifestation of empathy in interpersonal encounters is that embodied experience acts as the link between cognitive processes (thinking, mentalising) and affect (feeling) (Damasio, 1994) as both are rooted in our living (experiencing) body:

[T]he body, as represented in the brain, may constitute the indispensable frame of reference for the neural processes that we experience as the mind; [...] our very organism rather than some absolute external reality is used as the ground reference for the constructions we make of the world around us and for the construction of the ever-present sense of subjectivity that is part and parcel of our experiences.

p. xvi

Rameson and Lieberman (2009) underline the inherent complexities in defining the phenomenon of empathy as they suggest that “(i)t is probably more useful to consider the different component processes that are at work in the production of empathy, and neuroscience may help us to identify and understand these processes” (2009, p. 106). Building on this idea, it may be suggested that the combination of practice-based, scientific and artistic methods, employed in this research project, supports a more in-depth examination of the different component processes involved in kinaesthetic empathy. By further disentangling manifestations of empathy in relationship Rizzolatti and Sinigaglia (2006) suggest:

[...] sharing someone’s emotive state at visceromotor level and feeling empathy for that person are two very different things. For example, if we see that someone is in pain, we are not automatically induced to feel compassion for him. This often occurs, but the two processes are distinct in the sense that the latter implies the former, but not vice versa.

p.191

In other words, even though cognitive neuroscience studies (Silas et al, 2012; Muthukumaraswamy et al, 2004) have shown that a mirroring mechanism in the brain is implicated in movement observation and action execution via a fundamentally embodied process (see Interdisciplinary Methodology pp. 47-57, for further elaboration) this does not necessarily suggest a ‘default’ presence of empathy in our relationships with others. Decety and Jackson (2006) describe ‘agency’ as an instigator to empathically relating to another drawing from the practice of psychotherapy:

In the experience of empathy, individuals must be able to disentangle themselves from others. This distance is a key characteristic in psychotherapy [...] a complete

overlap between self and other representations could induce emotional distress or anxiety, which is not the function of empathy.

p. 56

The above statement suggests that in order to feel empathy one must open themselves to the other person's experience with an ability to hold both the shared experience in perspective (i.e. I recognise the feeling of pain as a familiar lived construct from experience) but also avoid merging with the other (i.e. I am aware the other person is in pain and I understand the compassion I experience is not because I am personally in pain). To fully take on or merge with another person's emotional presentation endangers our wellbeing and could result in what is known as vicarious trauma (trauma arising from the care of vulnerable or traumatised individuals) (Schauble, 2013) or burn-out (Christians, 2014) among others. However, from a phenomenological, developmental or feminist perspective, it may be argued that a complete differentiation between self and other is never possible as we are already implicated in the other through our being-in-the-world (Sheets-Johnstone, 2011; Winnicott, 1971; Allegranti, 2015). For this reason, in this research project, the construct of empathy (feeling with another) is considered within the parameters of kinaesthetic (movement sense) exchanges (as evident in DMP), which in turn are co-constituted within the intersubjective field of relating.

In dance movement psychotherapy the use of 'empathic reflection' dates back to two of its founders Marian Chace and Trudi Schoop and their early work in psychiatric hospitals in the United States of America (Berrol, 2006). Mirrored movement and the introduction of a circle group formation, to encourage interrelatedness and a sense of community, were the early foundations in the development of DMP interventions. Chace and Schoop mirrored their clients' movements as a way of resonating with individual emotional and mental states expressed through shared rhythmic movement improvisation (usually with the aid of music) (Sandel, 1993). In her exploration of neurological underpinnings of DMP's empathic therapeutic process, Berrol (2006) discusses mirroring as the cornerstone of this embodied psychotherapeutic practice. Expanding on this, and as already discussed in this chapter, it is important to contextualise client/group – therapist reciprocal and bi-directional exchanges within the intersubjective field, if we wish to challenge taken for granted views of embodiment. This investigation considers kinaesthetic experience to be situated and co-constituted within intersubjectivity. It further proposes embodied intersubjective relating as the ground on which our experiences (and meaning making) are shaped in the world. Gallese

posits that embodied simulation is a “neurally instantiated we-centric space” (2009, p. 520), also described as the ‘potential’ (Meekums, 2012) and ‘holding’ (Allegranti, 2011) space within DMP. The theoretical tension, between embodied processes (simulation theory) and reflection (or mentalisation in theory of mind terms) or verbal/non-verbal integration is a core concept in the theory and practice of dance movement psychotherapy and a key pedagogical underpinning within the field.

2.2 Locating the research field

I will now briefly locate the broad subject area of my investigation within the disciplines of dance movement psychotherapy, phenomenology and cognitive neuroscience, by pointing to their respective historical, philosophical and research developments. Further theoretical engagement with these disciplines will be offered through the discussion of the research findings (Chapters 5, 6 and 7) and in the final formulation of this thesis in Chapter 8 (Interdisciplinary Discussion pp.193-218).

2.2.1 Dance movement psychotherapy

Dance movement psychotherapy (DMP) is one of the arts psychotherapies including music, art, drama and play. It was developed in the 1950’s in the United States (first wave pioneers including Marian Chace) and further expanded in Europe and the rest of the world from the 1960’s onwards, today spreading across four continents and counting numerous regional professional bodies and training programmes. Despite being in existence for more than half a century DMP is still considered a new or developing psychotherapeutic approach within the broad medical field and general public awareness. Dance Movement Psychotherapy stands at the crossroads of diverse psychological, philosophical, body-work, psychotherapeutic, developmental, creative/artistic and postmodern theories, practices and approaches. The Association for Dance Movement Psychotherapy UK (ADMP UK website) states that “Dance Movement Psychotherapy (DMP) recognises body movement as an implicit and expressive instrument of communication and expression. DMP is a relational process in which client/s and therapist engage creatively using body movement and dance to assist integration of emotional, cognitive, physical, social and spiritual aspects of self”. DMP is practiced broadly within children’s centres, family services and schools, adult mental

health settings, community organisations and charities as well as within elderly services and specialist settings such as prisons, perinatal mental health and end of life care. Unlike its sister modalities (art and music in particular) DMP is arguably the least ‘visible’ arts psychotherapy both within the research literature and within the broad clinical field. This in turn raises questions around the *visibility of bodies* within medicalised, healthcare and clinical contexts.

One of the challenges DMP researchers and clinicians face when it comes to publishing field work findings relates to the notion of ‘validity’ of evidence within existing medical and academic contexts as Hervey (2009) suggests: “Prevailing attitudes within the scientific and scholarly community...exert some control over what kind of research is published...(i)n recent years there has been a notable broadening of methodological possibilities for research in the human sciences, which were once monopolized by positivist approaches” (p.319). This is also evident in DMP where an increasing number of researchers and theorists have recently published research and practice findings using a range of methodological approaches; meta-analysis (Koch et al., 2014) Cochrane reviews (Meekums et al, 2014; Ren & Xia, 2013) randomised controlled trials (Rochricht et al, 2011; Brauninger, 2012) and feminist interdisciplinary art-science collaborations (Allegranti, 2009; 2013; 2015).

Some authors within DMP literature (Meekums, 2012; Koch et al, 2014; Berrol, 2006) suggest that more evidence-based research is needed in order to survive the political and economic challenges impacting on the practice, a stance driven predominately by established medical models and public policy instruments such as outcome measures and payment by results (PbR). As “the conscientious, explicit and judicious use of current best evidence” (Sacket et al, 1996) evidence-based practice relies heavily on specific quantitative criteria that count as clinical evidence stemming from systematic research such as randomised controlled trials, systemic reviews and clinical guidelines. A positivist approach to DMP research is helpful in addressing questions such as outcome measures. However, it may be argued that the non-integrative nature of evidenced based research fails to address the complexities of, and tensions between, people, relationships, ‘illness’ and treatments.

There are a few issues to contend with regarding the call for evidenced-based research in DMP. In order to fit into wider positivist/medical frameworks, evidenced-based research falls short of addressing empirical and ontological limitations inherent in reductionist

methodologies. For instance, the widespread use of manualisation in, what is considered as ‘the gold standard’ in medical research, randomised controlled trials (RCTs) is arguably a questionable methodological approach for the study of the effectiveness of DMP. It could be argued that embodied interpersonal experiences emerging through DMP practice are best captured through ontologically congruent frameworks such as those available through qualitative, artistic and phenomenological meaning making. Another issue to consider is the value of artistic research processes in providing evidence. Allegranti’s approach in developing embodied research methodologies (2013; 2014; 2015) drawing from clinical practice, performance work and art-science collaborations is an exemplar of empirical and ontological interdisciplinarity. Challenging the very notion of what constitutes evidence and developing an interdisciplinary research approach to DMP (Allegranti, 2013) is arguably an essential development for the field: “Thinking outside of the familiar inquiry box can inspire not only the creation of new methods, but new audiences and venues as well” (Hervey, 2009, p.328). Alongside the evolution of non-dualist philosophical, social, cultural and political perspectives of body-mind integration (Allegranti, 2015) DMP researchers need to develop an equally integrated and embodied research language in theoretical and practical discourses of human experience.

Government policy around mental health promotes recovery through Social Inclusion (2009) and person-centred care. Dementia Strategy (2009) also calls for holistic approaches in delivering care and recommends the arts (dance and music in particular) as positive interventions in reaching people with severe cognitive impairment. Furthermore, NICE (National Institute for Clinical Excellence) guidelines recommend the arts/non-verbal therapies as effective interventions for reducing the negative symptoms of schizophrenia (Rohricht et al., 2011). My experience as a clinician and member of various NHS multi-disciplinary teams is that despite current policies being grounded in recent research findings and developments they are not always reflected in practice due to a significant split between carers/clinicians and clients/service users' lived experiences. Practitioners often express the lack of support and grounding they experience in their role due to various stress factors including under-staffed units and lack of training. These stressors manifest in their body as exhaustion or 'burn out' (Leiter & Maslach, 2009). Clients also frequently disclose recurrent incidents of feeling misunderstood, labelled and objectified (Dinos et al., 2004; MIND UK, 2014). Current governmental health strategies promoting service reduction and payment by results (PbR) arguably pushes clinicians to focus on quantity (of outcomes) rather than

quality (of services). The medical model tends to feed into this 'them-and-us' divide due to its inherent reductionist diagnostic approach as Knight and Bradfield (2003) describe: “The individual is understood and related to by the other in terms of the diagnostic object and [therefore] the individual's subjectivity is devalued” (p. 16).

April Nunes Tucker (choreographer) and Amanda Price (theatre researcher) from the Division of Performing Arts, University of Bedfordshire recently developed a research project exploring the use of performance techniques in conjunction with reflective practice narratives emerging out of healthcare contexts (Nunes Tucker & Price, 2010). Their study investigated performance-based methodologies and kinaesthetic approaches in helping clinicians “to ‘experience with’ the symptoms and conditions of illness presented by those in their care” (Nunes Tucker & Price, 2010, p. 185). Similarly, (part of) my study is located within a clinical setting and introduces embodied practice as the ground for exploring kinaesthetic interrelationships within clinical encounters. A possible diversion between my investigation and Nunes Tucker and Price’s approach lies within the contextualisation of embodied empathy. Drawing on healthcare definitions of empathy, Nunes Tucker and Price (2010) distinguish between ‘therapeutic empathy’ (being the theoretical construct of empathy taught in the healthcare curriculum) and ‘emotional empathy’ as a “state of openness towards the ‘other’... (and a) softening of boundaries between self and other” (p.190). This conceptualisation is akin to cognitive neuroscience distinctions of cognitive (perspective taking) and affective (emotional processing) empathy (Shamay-Tsoory, 2011). The authors acknowledge the level of risk implied in the ‘emotional empathy’ model that requires healthcare professionals to engage with their clients at a ‘human level’, “given the absence of any hard and fast guidelines for its application” (Nunes Tucker & Price, 2010, p. 191).

Another study in Buenos Aires (Fischman, 2009) examined DMP “as a medium of improving empathy levels of educators and health working professionals” (Fischman, 2009, p. 44). In a similar design to my research study Fischman developed her movement intervention drawing from Laban Movement Analysis (LMA). The researcher makes links between her findings of participants’ perceptual shifts during embodied empathic relating and neuroscience, however this inter-disciplinary dialogue is not further examined empirically in her work.

Through this research, I aim to explore and demonstrate how DMP approaches are effective interventions in holding and processing intersubjective tensions safely. Embedded

in the pedagogical, theoretical and clinical foundation of DMP is the notion of ‘being-with’ clients in reciprocal co-creational influence (Allegranti, 2015). Embodied approaches such as the use of mirroring, witnessing, movement improvisation, movement metaphor and embodied attunement, to name a few, are well documented within DMP literature (Allegranti, 2015; Meekums, 2012; Payne, 2006; Chaiklin & Wengrower, 2009). Allegranti describes this process of being-in-relationship as ‘embodied intersubjectivity’ and suggests that “an adaptive and permeable body is not necessarily of benefit to the [...] therapist, since it runs the risk of two-dimensionality, of being the object for the client, rather than the lived (relational) subject” (2015, p. 36). She goes on to suggest that “the therapist’s body as subject is surely a model for embodiment and change” (Allegranti, 2015, p. 36). This research invites clinicians to explore their own embodied subjectivities in relationship towards elucidating the influence of embodied practice within their clinical encounters.

2.2.2 Phenomenology

Deriving from the Greek words phenomenon [φαινόμενο] appearances and logos [λόγος] meaning, phenomenology emerged initially through the writings of Edmund Husserl as a philosophical orientation aiming to describe how the world is constituted and experienced through conscious acts (Manen, 1990, p. 184). Husserl’s early phenomenological ideas were further developed by three major phenomenological philosophers: Heidegger, Sartre and Merleau-Ponty. In 1945, French philosopher Maurice Merleau-Ponty published his seminal work *Phenomenology of Perception*. Unlike any of his predecessors, who placed consciousness at the centre of human experience in the world, Merleau-Ponty theorised the body as the prime site of knowing, thus developing what is often described as an embodied philosophy. For Merleau-Ponty “it is through one’s body that one is able to begin to understand the world” (Dillon, 1997, p. 150), thus what he termed as the ‘lived body’ is central to experience of, and in, the world.

Merleau-Ponty’s key ontological expositions on concepts such as consciousness, intersubjectivity, perception, corporeality and reflection have influenced post-modern theories of social-constructionism (Burr, 1999), sociology (Williams & Bendelow, 1998) feminism (Grosz, 1995; Butler, 2004; 2007), DMP (Allegranti 2015; 2013, Panhofer & Payne 2011) and dance philosophy (Sheets-Johnstone 2009; 2011), all of which define the body as a source of knowing and being-in-the-world; as opposed to the Cartesian theorem of mind

existing independently of the body, in the way a captain is in his ship (Harre, 1999). A key criticism however, by race and feminist theorists, suggests that the engendered neutrality assumed by Merleau-Ponty's descriptions of the 'universal' or 'anonymous' lived body represents a tacitly white male position (Murphy, 2008, p.197). In response to this, feminist phenomenological theorists build on Merleau-Ponty's concepts specifically addressing political dimensions of lived experience in relation to sex, gender and performativity (Butler, 1995; Grosz 1994; Allen-Collinson, 2011). A significant development of phenomenological philosophy comes from dance philosopher Maxine Sheets-Johnstone's works 'The Corporeal Turn: An Interdisciplinary Reader' (2009) and 'The Primacy of Movement' (2011). Through her critical analyses of key philosophical and scientific writings, Sheets-Johnstone (2011) aims to "bring to light blinders of thought that preclude an appreciation of the foundational phenomenon of animation and the significance of kinesthesia to both a proper ontology and a proper epistemology" (xviii). Sheets-Johnstone's (2011) theorisation proposes a paradigm shift within contemporary scientific and philosophical enquiry of consciousness and the mind: from (visual) perception to movement as the starting point in our investigations of human experience.

Broadly speaking, the concept of the living and/or moving body, that is "an ongoing process of authoring the lifeworld of the body" (Hung, 2010, p.6), informs the phenomenological perspective of this research. In this sense, participants' embodied stories are viewed as being authored and articulated by themselves (the participants) through intersubjective verbal and movement narratives. However, I agree with Finlay (2006) who speaks of the interpretative nature of phenomenological enquiry: "I recognise that my findings involve interpretation and that interpretative research involves engaging in *possible* [author's italics] meanings" (p. 6) as opposed to absolute truths. Phenomenology's influence on this study is threefold: (i) It forms the broad subject area by focusing the investigation on lived experiences in relationship and embodied intersubjectivity (Finlay, 2006; Allegranti, 2015) or else theorised as second-person perspectivity (Churchill, 2012), (ii) it offers methodological grounding toward articulating embodied, palpable (Galvin and Todres, 2012) or implicit knowing and (iii) it informs the practice-based nature of the investigation of embodied experience, perception and reflection (Finlay, 2006) through creative, artistic and performance contexts.

The phenomenological lens also provides a useful framework in relation to what Gibson (1979) described as 'affordance' in his conceptualisation of ecological psychology. In

his view, traditional theories of indirect (visual) perception present a dualistic ontological problem in that they create a subject-object dichotomy (Gibson, 1979). Gibson's ecological view aims to understand "what it is about the environment that allows one to directly perceive it" (Dotov et al, 2012, p 31). Gibson's "interactionist view of perception and action that focused on information that is available in the environment" (Greeno, 1994) was further developed through Gallagher's 'direct perception' analysis. By linking phenomenology with a revision of neuroscientific findings on perception Gallagher defines direct perception as "an enactive and intersubjectively attuned perception that on the sub-personal, neural level depends at least in part on mirror resonance processing" (2008, p. 542). This notion of immediate understanding, manifesting through embodied intersubjective relating, compliments the practice based approach of this research project as it values implicit pre-reflective knowing, which is a core aspect of phenomenological thinking and a key component of dance movement psychotherapy practice.

2.2.3 Cognitive Neuroscience

Cognitive neuroscience has its origins in the 19th century, initially emerging as neuropsychology, with the study of injury to specific areas of the brain and its impact on functioning such as speech and language (e.g. Broca, 1861). The modern marriage of cognitive studies and neuroscience did not happen until the early 1980s where neuroimaging techniques started to be utilised in behavioural studies. A significant breakthrough of neuroscientific progress relates to the discovery of the mirror neuron system (MNS) in 1992 by a group of scientists working with macaque monkeys in the University of Parma, Italy (Di Pellegrino, Fadiga, Fogassi, Gallese & Rizzolatti, 1992). The researchers found that this distinctive group of neurons (MNs) fired both when the monkey executed a motor act but also when it observed another monkey (or human) perform the same act (Rizzolatti & Sinigaglia, 2008). Subsequent studies on humans confirmed that motor areas of the brain activate during movement observation, performance, imitation and even imagination (Rizzolatti & Sinigaglia, 2008; Gallese, 2003). A series of hypotheses situate the functional role of the mirror neuron system within human imitation, action understanding and empathy among others (Rizzolatti & Sinigaglia, 2008). A more detailed review of MNs and the functional properties they afford is given within the experimental discussion of this investigation (Chapter 6, pp.139-167).

This research project draws on current advances in the field of cognitive neuroscience relating to how a 'mirror neuron system' plays an important role in perceiving and relating to others (e.g. Silas et al., 2012; 2010; Jola et al., 2012; 2011). A mirror neuron is a neuron in the cortex that displays motoric properties and fires both during performance of a movement and during the observation of movement (Di Pellegrino et al, 1992). A mirror neuron system is defined as an anatomical circuit of neurons (endowed with motoric properties), which circulates information in and away from these neurons (Silas, 2009).

The presence of mirror neurons, and a mirror neuron system in the brain, has been observed through EEG experimentation, specifically exploring movement processing (Silas et al, 2012). A particular contribution of EEG experimentation in the study of the MNS in humans, concerns the modulation of what is known as the Mu rhythm (~8-13 Hz) measured over the primary motor cortex (Muthukaraswamy, 2004; Silas, 2009; Silas et al, 2012). EEG studies have shown that a decrease in power at the Mu frequency (~8-13) is thought to reflect an underlying desynchronisation of neuronal firing in cortical motor areas which, in turn, is associated with increased processing (Oberman, Pineda & Ramachandran, 2007; Bernier, Dawson, Webb & Murias, 2007). A detailed description of Mu modulation during movement processing is unpacked as part of the experimental component of this thesis (see Chapter 6, pp. 139-173). The use of EEG in this study is used for the exploration of implicit manifestations of movement processing in the brain during intersubjective encounters. A decrease in power at the mu frequency is a well-established method for measuring motor activation during movement processing. Furthermore, the protocol used to measure mu changes means no specific-event needs to be temporally synced with the EEG recording; something that is difficult to achieve with other methods of neuroimaging or stimulation. Using this specific technique to measure motor activation allows for the following questions to be answered: how does motor activation change after embodied practice training during movement execution, observation and cooperation? To date, no formal research hypothesis about kinaesthetic empathy has been published within the field of DMP in Britain, in this interdisciplinary context drawing from dance movement psychotherapy, cognitive neuroscience and phenomenological discourses. This research project is a response to this gap in theorising the moving body in connection to kinaesthetic empathy within DMP clinical practice and research.

By examining the intersubjective encounter using embodied approaches and cognitive neuroscience methods, side by side, this investigation attempts to unpack kinaesthetic

relational understandings, through an exploration of live movement processing in the brain as indexed by the EEG (see Chapter 3: Interdisciplinary Methodology pp. 47-57 and Chapter 6: Embodied Numbers pp. 139-167, for more information on the EEG experimentation in this study). Further, this project introduces discourse about the importance and relevance of embodied interventions and approaches within clinical practice assuming that empathy is grounded in relational, embodied and intersubjective foundations (Finlay, 2006; Gallese, 2003).

The use of EEG, in this study, is not viewed in a dualist sense but rather as a tool for offering an additional layer of understanding in the process of meaning making. Applying a neuroimaging technique such as the EEG in the study of embodied intersubjectivity allows me to ask questions about embodied processes that are not available by introspection or observation as Rameson and Liberman (2009) explain:

Like many other psychological processes, empathy is difficult to introspect and report upon... [t]he inability to know exactly what processes are taking place inside our minds when we experience empathy is probably one reason why there are so many different definitions of the phenomenon. However, this inherent difficulty is one reason why neuroimaging techniques have tremendous potential to help us gain a better understanding of the construct of empathy.

p. 106

The link between DMP and neuroscience in relation to investigating empathy is currently being developed by researchers in Germany and Canada (Behrends et al., 2012; McGarry & Russo, 2011). McGarry and Russo (2011) focus their investigation of empathy within DMP through the use of mirroring as intervention. Mirroring is used in DMP experientially both as a meeting place between therapist and client but also as part of the group process. McGarry and Russo (2011) make a direct link between the mirroring approach, used in the DMP clinical process, with current advances in mirror neuron research. However, the MNS does not imply a direct replica of neuron activation in the mover-observer relationship, rather it refers to what Gallese describes as ‘embodied resonance’ or ‘simulation’ (2009; 2014). As mentioned so far, neural mirroring refers to action matching motoric properties of neurons, which fire during performed, imitated, observed and imagined movement. In DMP mirroring refers to the attuned shared movement exchange (Samaritter & Payne, 2013) between therapist and client (or group), rather than a direct imitation of the movement itself. Even though mirroring is indeed a useful therapeutic intervention used in DMP, it is by no means the only one. To reduce the multi-dimensional embodied practice of

DMP to a single ‘functional’ mirroring mechanism endangers a dualist methodology as it disregards cultural, gender and phenomenological considerations (to name a few) arising in relationship. Although McGarry and Russo attempt to make theoretic links between DMP practice and neuroscientific developments, they do not relate the two approaches methodologically. In contrast, this investigation of unpacking embodied empathy through psychotherapeutic, artistic and neuroscientific methodologies offers an empirically novel interdisciplinary approach in addressing embodied cognition.

For their study of embodied empathy with clients of the autistic spectrum Behrends et al. (2012) propose a standardised “empathy-fostering movement and dance intervention” (p. 112) utilising “variations of imitation, synchronous movement and motoric cooperation” (p. 113). My research project follows a similar model of practice-based research (with clinicians) grounded in key DMP constructs, including Laban Movement Analysis, mirroring, touch and embodied perspective taking. However, there is a significant difference between a standardised intervention, which Behrends et al. (2012) describe as a ‘lesson’, and a process-based practice grounded in lived experience. Behrends et al. (2012) discuss the challenge “of finding a balance between simplification and manualisation on one hand and the improvisational application of diverse methods and techniques on the other hand” (p. 114). Rohricht et al. (2011) follow a similar methodological approach in their recent randomised controlled trials of measuring the reduction of negative symptoms of schizophrenia through the application of manualised body-oriented psychotherapy interventions. I argue that standardised and manualised interventions within psychotherapy research endanger objectifying lived experience and promote rigid, functional, ‘medicalised’ and mechanistic applications that are far removed from the complex multi-dimensional processes emerging through human relationships. By contrast, this investigation aims to demonstrate that research in and about embodied processes should be methodologically ‘embodied’, that is grounded in the subject it attempts to unpack through the utilisation of multi-modal methodological approaches, as opposed to singular reductive ones. Despite their various ontological and epistemological differences, it is encouraging that emerging interdisciplinary studies link neuroscientific theory and DMP (Behrends et al. 2012; McGarry & Russo 2011) as a further development of new methodological perspectives into the theory and practice of DMP.

In the UK kinaesthetic empathy has been investigated in relation to the experience of watching dance and audience research (Jola, Ehrenberg & Reynolds, 2011). The Watching Dance: Kinaesthetic Empathy project explores how “the phenomenal experiences of a dance

audience member, as accessed by qualitative research methods, can be related to underlying neurophysiological evidence of their experiences” (Jola, Ehrenberg & Reynolds, 2011, p.18). Jola et al’s (2011) research design uses sophisticated neuroscientific tools such as transcranial magnetic stimulation (TMS) and functional magnetic resonance imaging (fMRI) in conjunction with spectators’ first person accounts emerging through the process of watching live and video recorded stylised dance performance. This research project will be described in more detail later in the thesis.

Even though my research design aligns itself with the Watching Dance project interdisciplinary methodology employed across phenomenology, dance and neuroscience, a theoretical differentiation may be found in the conceptualisation of embodied empathy. Jola et al. (2011) discuss empathy from a visual processing perspective focusing on the spectator(s) (passive) role in their relationship with the dancer. In other words, the dancer moves and the spectator empathises. This approach appears directly related to Theodor Lipps’ original idea of ‘*empathy*’ (empathy) who using the example of watching an acrobat on a tightrope suggested that “affective expressions are instinctively and simultaneously mirrored by kinesthetic [author’s spelling] strivings and experience of corresponding feelings in the observer” (Montag, 2008, accessed online). This visual and one-directional examination of the spectator’s empathy (as triggered by the dancer’s performance on stage) is arguably relevant in terms of researching audience’s kinaesthetic experiences, however it becomes problematic within the clinical context. In this study mover and witness are viewed as co-influencing subjectivities and embodied experience is considered as the ground for empathic intersubjective relating. Kinaesthetic interrelating is explored through Embodied Practice Focus Groups (see Chapter 5: Embodied Words pp.84-138), a live dance theatre performance (see Chapter 7: Kinaesthetic Stories pp.174-192) and EEG experimentation during live movement interaction (see Chapter 6: Embodied Numbers pp. 139-173). An advantage of using electroencephalograph (EEG) recordings, as part of the movement processing exploration in this study, is that participants are able to perform basic hand and arm movements; something impossible with other techniques (TMS and fMRI).

A further link between this investigation and neuroscientific theorisations of embodied empathy involves what Gallese (2009) describes as the integral ‘we-ness’ of our being, which further shapes our social and developmental learning and growth. In his embodied simulation model Gallese (2009) posits that “(t)he body is the main source of meaning, because it not only structures the experiential aspects of interpersonal relations, but

also their linguistic representations” (p. 533). He goes on to relate implicit and pre-linguistic mechanisms of embodied simulation-driven mirroring mechanisms with the therapeutic praxis of psychoanalysis (Gallese 2009). Building on Gallese’s premise this investigation takes into account phenomenological, clinical, biological and environmental factors at play within intersubjective relating and action understanding, as part of clinicians’ experiences of kinaesthetic empathy.

In this chapter, I have demonstrated how my research project fits in and informs existing and current research and theory in the fields of cognitive neuroscience, dance movement psychotherapy, healthcare training and the examination of empathy within clinical, social and artistic contexts. Furthermore, I have addressed limitations found in existing research models and have outlined a novel approach in empirically examining kinaesthetic empathy. The following chapter examines the three interdisciplinary methodological perspectives employed in this study: embodied practice (practice-based approach), phenomenology (qualitative lens) and cognitive neuroscience (quantitative lens).

Chapter Three: Interdisciplinary Methodology

In this chapter, I discuss the ontological and epistemological positioning of this investigation. The interdisciplinary methodology of the research project is unpacked to reveal how qualitative, quantitative and embodied discourses may co-exist, collaborate and reciprocally inform the formulation of the research thesis (Jola et al, 2011). Drawing from cognitive neuroscience (experimentation), dance movement psychotherapy (embodied practice) and phenomenological (lived experience accounts) methodologies a thorough description of the philosophical and research foundations of the investigation is presented.

3.1 Phenomenological inquiry

Despite research developments in the field of DMP, theorising the moving body has been problematic according to Behrends et al. (2012):

One of the reasons might be that dance and movement in social contexts – and maybe even more therapeutic work in DMT [Dance Movement Therapy] – are difficult to investigate because they are characterized by complex creative and intuitive rather than controlled or standardised processes.

p.108

They continue to explain that “empirical research on how specific DMT [authors’ spelling] elements work is just beginning” (Behrends et al., 2012, p.108). Even though, I agree, that empirical research in DMP is not extensive, there are some epistemological concerns in advocating ‘controlled or standardised processes’ as the only ‘valid’ way to produce knowledge. Phenomenological research makes a case for the equal ‘validity’ of qualitative knowledge production as Howitt (2013) explains:

To the mainstream psychologist, phenomenology may appear to be hopelessly subjective. But this is to fail to understand the issue of what is reliable knowledge [...]. Phenomenology focuses on the description of the experiences of people in their lived world. Too much psychological research has bypassed description in a search for cause and effect relationships without understanding the meaning of the things which constitute their causes and their effects.

p. 322

Howitt (2013) further considers experience and consciousness as ‘non-verbal’ phenomena. Even though he relates the non-verbal layer as phenomenology’s limitation in data collection captured through language, I would argue that it presents an advantage in this investigation, as first person accounts have been captured through experiential reflection. Building on Howitt’s assertion that “experience is beyond language” (2013, p.323) this research project asked clinicians to relationally explore kinaesthetic empathy, through a series of embodied practice workshops, before reflecting on their experience through language. Therefore, rather than considering kinaesthetic empathy as an abstract term, research participants practiced relational embodiment through live interactions with fellow research participants.

Embedded in the philosophical orientation of this study is the idea of using the body as “a key methodological term” (Morris cited in Diprose & Reynolds, 2008, p.111), since the subject of enquiry itself is no other than the process of embodiment in relationship. Allegranti (2015) describes bridging theoretical ‘knowing’ with embodied practice as “investigating [...] conceptual schemes or ‘texts’ that ontologically ground ‘knowing’ with/in the body” (2015, p.12). The moving (relational) body forms the core focus of this research project. In addition, participants’ lived (embodied) experiences manifesting in clinical (practical) contexts inform the phenomenological orientation of the investigation. To develop discourse in this area a practice-based intervention (embodied practice workshops) was introduced as a methodological approach informed by dance movement psychotherapy theory and practice. Unlike Behrends et al (2012), McGary & Russo (2011) and Rohricht et. al (2011) who propose manualised, standardised and controlled movement interventions, this study offers an empirical investigation of embodiment and intersubjectivity drawing from participants’ emerging (phenomenological) constructs (including emerging socio-political issues).

In this project, phenomenology as subject and as methodology intersect, in that phenomenology is not only proposed as the ground for practitioners' embodied experiences in relationship but also as a theoretical compass for this research by considering empathy from an embodied perspective. The phenomenological approach applied in this investigation is informed by Eckartsberg's model (cited in Valle, 1998) of Empirical Existential-Phenomenological research (EEP). Eckartsberg describes his research approach as 'existential-phenomenological'. The term ‘existential’ is used because human science investigations consider themselves primarily with “the perennial themes of human existence in its broadest sense, as finite, embodied, mooded, in time, situated, threatened by death,

capable of language, symbolism, and reflection...” (Eckartsberg, 1998, p.8). The term ‘phenomenological’ refers to the qualitative engagement with findings with particular focus on the individual's lived experience and perceived reality. Therefore, observation of intersubjective phenomena (qualitative findings) are constructed within particular embodied (lived) contexts between the research participants, the researcher and the environments within which they interact.

Phenomenological methodology explores social phenomena interwoven with lived experience. For this reason, qualitative researchers use multiple methods toward validating their findings including triangulation (cross referencing among sources), member checks (checking tentative data with co-researchers), audit trail (detailed accounts of methods procedures and decision points) and adequate engagement with research findings and position of reflexivity (remaining both close to the investigative process and distanced from the emerging material) among others (Meriam & Associates, 2002; Robson, 2002).

The phenomenological perspective applied in this investigation extends to the practice-based component of the research project by exploring participants’ lived (relational) experiences through movement improvisation (see Chapter 5: Fieldwork Stage 1, pp. 84-138) and dance theatre performance (see Chapter 7: Fieldwork Stage 2, pp. 174-192). Following Allegranti’s (2015) example, embodied practice is used both as a methodological approach in the research process, by introducing movement-based interventions as part of the data collection and, as a discursive tool in exploring and articulating themes of kinaesthetic empathy, through a live dance theatre performance. In the same way that written analysis, or statistical interpretations of the findings are conveyed to the reader through language (Chapter 5) and numbers (Chapter 6), the embodied discourse of this investigation was also communicated via a live dance theatre performance (29th May 2014), thus further developing a participatory kinaesthetic experience of empathy within an artistic context. Excerpts of the performance appear throughout the thesis in photographic form and a video recording of the performance may be viewed in DVD format (see Appendix 23, p. 102). Audience member contributions and responses have been captured in written form (see Chapter 7), thus adding a further layer to the dialogic construction of meaning making.

Guided by the phenomenological perspective two phenomena were of particular significance in this research project: (i) participants’ lived and relational experiences of kinaesthetic empathy and (ii) the possible meanings (of those experiences) developing within

a dialogic reflexive process (Sheets-Johnstone, 2011; Finlay, 2006). To examine these aspects of kinaesthetic empathy, I asked questions such as: ‘What is the experience like?’ and ‘What possible meanings emerge from this experience?’ Research participants responded to my phenomenological questioning either through verbal reflection and group discussion or through embodied (relational) improvisation. In this sense, findings emerged *in between* the multiple processes of embodying (experiencing), reflecting (thinking in and about movement), observing (witness perspective) and dialogic processing (intersubjective understandings). Therefore, the phenomenological findings discussed in this thesis comprise *possible meanings* of kinaesthetic empathy as opposed to absolute truths (Finlay, 2006). The phenomenological approach complimented the practical and experimental investigation of kinaesthetic empathy, to which I turn next.

3.2 Embodied practice

The practice-based approach applied in this investigation is informed and shaped by the theory and practice of dance movement psychotherapy. Key DMP constructs such as Laban Movement Analysis, mirroring, touch and embodied perspective taking (after Parker & Best, 2005) guided the embodied workshops, which in turn constituted the core ‘intervention’ within the data collection process. In choosing to explore these four broad DMP approaches as part of my embodied practice investigations I do not intend to suggest them as a prescriptive or exhaustive model in DMP. Nor am I considering them as the only ‘valid’ contributions to embodied practice research. Research limitations imposed a necessary selection process of procedures to be followed given available time frames and resources. Nevertheless, the chosen DMP approaches relate to the key research questions guiding this investigation. The movement intervention programme was used as a structure, within the data collection process, where co-researchers unpacked their intersubjective phenomenological experiences of kinaesthetic empathy.

The exploration of the four Laban Movement Analysis effort qualities, time (sudden and sustained), weight (strong and light), space (direct and indirect) and flow (free and bound), allowed participants to playfully explore their own movement preferences and possibilities within intersubjective encounters. LMA exploration also supported the development of a shared vocabulary in articulating movement experiences verbally during the focus group discussions. Rather than using the LMA tool in a deterministic sense (i.e. the

researcher conducting an LMA analysis of participants' embodied process), participants were encouraged to experience and reflect on their own embodied meaning making (Kaylo, 2006) of kinaesthetic empathy. Thus, participants' felt experiences, but also their physical engagement with given tasks, varied from one person to the next. This multiplicity of embodied knowing was subsequently phenomenologically unpacked within the focus group discussions.

Mirroring was explored as a core relational kinaesthetic experience of the DMP approach. Different mirroring tasks were introduced exploring matching, mismatching and dialogic processing. Traditionally mirroring is used in DMP as an attunement and reflection tool. Rather than imitating or copying another person's movement, mirroring is practiced from a sensing and witnessing perspective in DMP (Meekums, 2012). Co-researchers' improvised intersubjective duets were also explored through meaning making during the focus group discussions.

Touch was explored through improvised experientials focusing on passive, responsive and dialogic physical contact. Cultural, gender and power implications of touch were verbally unpacked considering practitioners' experiences of touching, holding, handling or restraining clients in healthcare contexts.

The final embodied approach explored with participants involved embodied perspective taking (Parker and Best, 2005). Practitioners explored different perspectives drawing from the different roles they embody: (i) first person position of their professional identity, (ii) second person position by stepping into their clients' shoes, (iii) the wider clinical context within which their clinical relationships emerge and finally (iv) practitioners' embodied positioning outside the clinical context (i.e. their embodied positioning before they arrive to work). I recognise additional possibilities for further embodied perspective taking, in including social, cultural and gender considerations for instance, but due to practical limitations the relational dynamics emerging from the clinician-client relationship were viewed as more relevant to the research investigation.

The embodied approaches shaping the practice-based investigations aim to highlight the different types of 'knowing' afforded to us by shifting between different positions: moving, witnessing and reflecting or else experience, observation and verbal articulation. Reynolds and Reason (2012) use the term 'corporeal turn' to conceptualise developing discourses of the mind and body:

...the corporeal turn demands that we face the challenge of considering practices and experiences that typically sit outside of reflective consciousness. Within the arts this is most explicitly manifest in the development of practice-based research. Also referred to as practice-led research or practice-as-research, practice based research is varied and far from homogenous in its methodology or subject matter, but broadly speaking it describes the recognition that arts-making, across disciplines, can represent a form of research that generates and communicates knowledge.

p. 21

This investigation of kinaesthetic empathy bridging phenomenologically informed embodied practice with neuroscientific methodology builds on this corporeal turn towards a more three dimensional knowledge production and theorisation of embodied intersubjectivity from the ground up: starting from practice to produce evidence and not the other way round. This practice-based research project builds on Allegranti's Embodied Performances (2015) research methodologies. In line with Allegranti's (2015) paradigm of developing embodied research methods "to access accounts of experiences [and] nuances of meaning" (p. 60) embodied practice acts as the philosophical, methodological and ethical anchor in this investigation. Whereas Allegranti (2015) uses the term Embodied Performances to denote the autobiographical, relational and political (re)authoring of embodied experience, I use the term *embodied practice* to consider kinaesthetic relational experience as (and in) practice within clinical contexts. Experiential practice (see embodied practice focus groups in Chapter 5 and live dance theatre performance in Chapter 7) facilitated a practical (embodied) interrogation of kinaesthetic empathy, a key ontological and epistemological methodological approach in this research project. The emerging experiential understandings of kinaesthetic empathy were further unpacked through phenomenological questioning (as discussed above) and related to the experimental examination of live relational movement processing through EEG.

3.3 The scientific lens

This study aimed to empirically explore the process of embodiment grounded in developing understanding of how, if at all, the MNS helps us relate to others. Rizzolatti and Sinigaglia (2006) explain: "at [the] neural level the mirror neuron mechanism embodies that modality of understanding which, prior to any form of conceptual and linguistic mediation, gives substance to our experience of others" (p.192). Criticisms of social neuroscience research suggest that it is (often) limited to localising social and personality variables to specific areas of the brain. Dickter & Kieffaber, 2014 refute this claim by explaining that

“(u)tilising neuroscience methods can also allow for an examination of the effects of social events and stimuli on neural processing, making it possible to understand how social phenomena affect the brain” (pp. 4-5). Furthermore, an account of brain activation under certain circumstances, as is the case in this investigation, can provide a description of a certain mechanism. Therefore, a mechanism can be explained without observation of behaviour or the use of language, as seemingly unobservable mental processes may be elucidated.

Asking questions about unobservable (through introspection or through behaviour observation) phenomena involved in social (embodied) interaction is a key advantage in utilising neuroscientific methodology. As reviewed in Chapter 2 (Literature Review pp. 24-46) and further developed in Chapter 6 (Embodied Numbers pp. 139-173), many have linked mirroring mechanisms to some components of empathic processing and intersubjective understanding (Jola, 2012; Silas et al., 2012; Rizzolatti & Sinigaglia, 2006; Gallese, 2003). If indeed motor mirroring is linked to empathy the most likely candidate is an ‘embodied empathy’ or ‘kinaesthetic empathy’ as this is fundamentally a non-abstract ‘lived’ affective experience.

Even though the EEG study, utilised in this project, draws on existing cognitive neuroscience experimental designs (Oberman et al, 2005; Silas et al, 2012; 2010) it has necessarily been modified to the specific requirements of the interdisciplinary investigation. First of all, typical EEG experimental designs that test Mu rhythm modulation during movement processing explore goal oriented actions, often involving manipulation of an object (Muthukumaraswamy, et al 2004) or video animation (Silas et al, 2010; Oberman et al, 2007) as opposed to the improvised movement tasks utilised in this investigation. In this research project, participants were asked to explore five DMP movement conditions namely time, weight, flow, space and mirroring during the following four action conditions: observation, performance, imitation and dialogic processing. Instead of responding to video footage participants engaged with a partner (research assistant or researcher) (Jarvelainen et al, 2001). Therefore analysis of the Mu wave modulation was in relation to embodied explorations during actual social interaction, which is not the mainstream practice. Even though participants were instructed to move during the EEG testing the permitted range of movement was limited due to the experimental apparatus. Once the EEG electrode cap was worn and connected to the recording device, the participants were limited to moving their arms and hands using only a small mid-range kinesphere from a seated position. They were

also discouraged from moving their head and using facial expressions. Isolating social interaction to hand gestures discounts the numerous other layers of non-verbal communication and expression (posture, facial expression, full body integration etc). However, this limitation was essential in order to ensure that the recording of the EEG waveform would not be ‘contaminated’ by noise caused by muscular movement in the head or face. Furthermore, although artificial, the focus of the experiment thus became more about movement and less about facial expression, which is a unique and distinct cognitive and neural process (Posamentier & Abdi, 2003).

The scientific lens offered yet another perspective in this investigation as it allowed for a different examination of kinaesthetic empathy through experimental testing. Participants were asked to attend to specific movement and experimental conditions whilst measurements were being recorded from the surface of their scalp. As the primary investigator during the EEG, I shifted my relational positioning to research participants to that of an experimenter. Whereas in the practical and phenomenological investigations I unpacked kinaesthetic empathy through reciprocal relational understandings *with* participants, during the EEG the neuroscientific method was applied one-directionally, with research participants positioned in a passive role.

The use of EEG experimentation, may appear discordant with the phenomenological approach of the embodied practice research process. However, experimental investigations of kinaesthetic empathy have been notably absent from DMP literature and research developments. Applying the neuroscientific method to the investigation of embodied (relational) practice (in clinical contexts) offers a unique, and timely, opportunity to generate new empirical knowledge. At the heart of this investigation is interdisciplinary perspective taking in relation to kinaesthetic empathy and to this end, the neuroscientific perspective was addressed not only from a theoretical point of view but also methodologically. The tensions arising from the multiple approaches informing this investigation offered rich interdisciplinary discourses on the subject of embodied intersubjectivity as the continuum for kinaesthetic empathy.

3.4 Interdisciplinarity

By combining a clinical approach (DMP) with a philosophical position (phenomenology) and a scientific method (EEG), this investigation holds the potential for an interdisciplinary knowledge production emerging from the meeting points between the different perspectives. Furthermore, by empirically examining kinaesthetic empathy as a clinical and intersubjective phenomenon this project aims to contribute to growing research in the fields of the arts therapies, psychology, mental health, cognitive neuroscience and social studies.

Throughout this chapter, I have emphasised the complexities inherent in unpacking the multi-dimensional subject of kinaesthetic empathy and thus the importance of adopting a flexible and integrative approach in conducting an empirically rigorous investigation. In this sense, I see the confluence of DMP, phenomenology and cognitive neuroscience not as opposing forces in competition but rather as synergetic perspectives complimenting one another, whilst acknowledging the tensions arising therein. Each research finding emerging from differing viewpoints (embodied practice, phenomenological accounts and EEG measures) offers an additional layer of understanding to the central search of how kinaesthetic empathy manifests in relationship. In addition, this study aims to contribute to novel ways of conducting integrative research in relation to human experience utilising both qualitative and quantitative approaches. Therefore, this research project speaks to Reynolds and Reason's (2012) assertion that,

[T]he wider context of this topic [kinaesthetic empathy] is a moment of synergy, possibly of historical importance between research in the arts/humanities and the sciences, that accompanies a paradigmatic shift towards embodied cognition.

p. 20

The synergetic relationship between the different disciplines informing this investigation is evident in the ontological and epistemological positions taken within the outlined interdisciplinary methodology. For example, the use of DMP constructs (LMA and dialogic processing) within the EEG experimental design build on traditional neuroscientific studies, thus, creating a bridge between arts therapies research and cognitive neuroscience. Similarly, the neuroscientific conditions explored in EEG (observation, imitation, performance) (see Chapter 6 pp. 139-167 for further discussion of these conditions) were also addressed during the embodied practice explorations, offering an additional perspective in considering ways of movement interaction and interrelation. Finally, the phenomenological paradigm of embodied reflection informed the capturing of participants' lived experience

accounts during the practice-based component of the investigation. (For a detailed overview of the interdisciplinary methods applied in this investigation see Chapter 4 pp. 58-83)

Over the last decade there has been a significant move toward collaborative working in asking and answering questions concerning the workings and manifestations of human experience. This integration of diverse disciplinary perspectives is being developed across a range of collaborative research projects: The Choreography and Cognition Research Project (McGregor & de Lahunta, 2013; Barnard & McGregor, 2013), Watching Dance: Kinesthetic Empathy (Jola et al., 2011), Tedx Albertopolis: A Tale of Two Cultures (2013), Mirror Neurons, Embodied Empathy and the Boundaries of the Self (Gallese et al., 2014), research into the brain mechanisms of synchronous movement (Sperling et al., 2016) and neuro-feminist investigations of kinaesthetic intersubjectivity (Allegranti & Silas, 2016; 2014; Blum et al, 2012). What these projects have in common is a synergetic research approach, in bridging discourses between the arts, sciences and (in some cases) psychotherapies.

Similarly, this investigation into kinaesthetic empathy speaks to Jean Knox's (2014) assertion that interpersonal process is the bridge between scientific research and therapeutic applications. Furthermore, artistic practice, here in the context of a live dance theatre performance, adds an important (kinaesthetic) insight into the implicit and explicit processes of interpersonal relating. As Reason (2012) suggests: "practice-based research advances notions of 'embodied knowledge' that might be experientially known through art and that suggest limits to discursive forms of knowing [author's emphasis]" (p. 195), thus rendering interdisciplinarity an essential approach towards a new theory building with the existing tools (Gallese, 2014). Arguably, interdisciplinary synergies generate possible new translations of existing theorisation within artistic, clinical, scientific and philosophical discourse as shown in the diagram below.

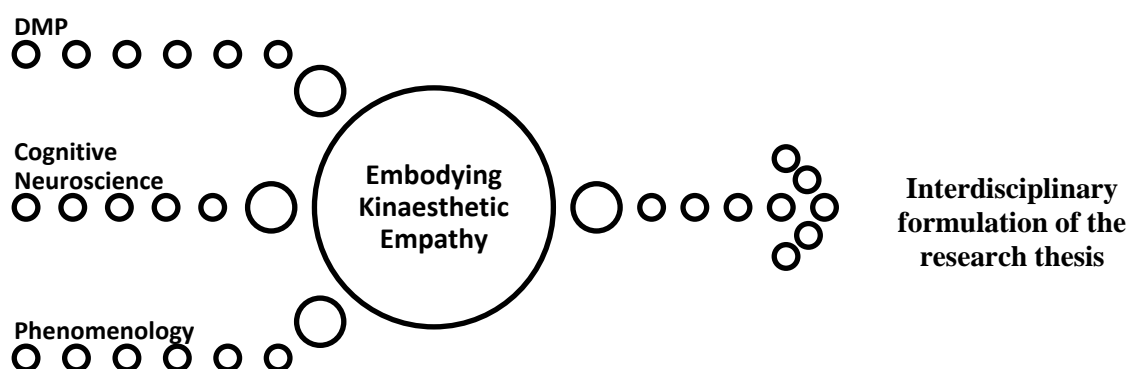


Figure 2: Interdisciplinary Formulation of the research thesis

A final methodological issue to consider is with regards to my positioning as researcher embodying the three different perspectives: psychotherapeutic, phenomenological and scientific in this project. My familiarity with navigating embodied practice and phenomenological methodology, due to my professional experience in these fields, creates a relative imbalance with my tentative and newfound role as an experimenter. My dialogic relationship with DMP and phenomenology is well established whereas engaging with neuroscientific theory and practice is a relatively new experience for me. Therefore, the interdisciplinary methodological tensions emerging in the investigation are not separate to my own experience of engaging with them (see Chapter 8.6 Interdisciplinary Investigation: Treasures and Pitfalls p. for further discussion). Generally the term intersdisciplinarity is used to denote collaboration between two or more researchers from different or allied fields (as seen in the examples mentioned above). Interdisciplinary research may also refer to a single researcher with expertise in multiple fields (see Allegranti, 2015). In the context of this project interdisciplinarity is used as an amalgamation of engaging with different *ways* of ‘knowing’ (embodied practice, phenomenology and EEG). The meeting of these different experiences creates a third possibility, a new landscape of understanding and theorising kinaesthetic empathy. This notion speaks to Allegranti’s (2016) assertion of our capacity to grow ‘new bodies’ and therefore new experiences and theories of our human experience. Not only is this relevant for researchers (learning new skills and engaging in new methodologies) but also for the different disciplines and professional practices. In this sense, this project equally invites DMP and EEG to exchange methods and perspectives in examining embodied interrelating with phenomenology, the field investigating human experience, as the groundwork of this enterprise. The next chapter offers a closer look of the interdisciplinary methods applied in this project.

Chapter Four: Interdisciplinary Methods

In this chapter I outline the practical steps taken for the data acquisition and analysis of the fieldwork carried out in this project. I also discuss ethical considerations involved in my collaborative work with research participants, as well as strengths and limitations embedded in the research design (with reference to resources, research sites and equipment used). Within this discussion I address issues relating to my positioning and overlapping roles as primary investigator, dance movement psychotherapist, NHS clinician, member of the multi-disciplinary team and choreographer.

The research fieldwork was carried out in two stages extending over a period of nine months. The data analysis was conducted separately following completion of the fieldwork. *Fieldwork Stage 1: Data Collection* involved the core research study utilising a mixed methods interdisciplinary procedure combining (i) embodied practice focus groups (drawing from DMP interventions), (ii) cognitive neuroscience experimentations (electroencephalography; EEG) and (iii) research questionnaires. Due to practical limitations (including NHS staff timetabling and location limitations) *Fieldwork Stage 1* was conducted at different time periods for each participant group (see diagram below). *Fieldwork Stage 2: Embodied Performance* was a development from *Fieldwork Stage 1* (Studio Lab group only, see details in 4.2 Fieldwork Stage 2: Embodied Performance pp. 77-83) aiming to investigate emerging research themes through choreography and performance. It involved a series of embodied practice workshops culminating with a live dance theatre performance and art/photography exhibition.

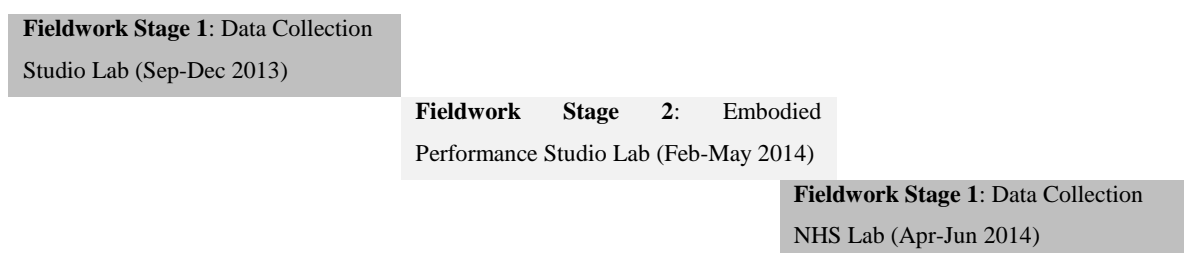


Figure 3: Fieldwork Roadmap

I will outline each fieldwork stage separately addressing the following areas respectively: 1. Research Participants, 2. Fieldwork Design, 3. Ethical Considerations and 4. Analysis Procedures. So far there has been no published research in the field of dance movement psychotherapy that implements an interdisciplinary investigation into kinaesthetic

empathy, by combining DMP, EEG and phenomenology. For this reason, a level of imaginative experimentation was needed in developing this novel research design by drawing on relevant documented research studies (Jola et al, 2011; Oberman et al, 2007; Silas, 2009; Allegranti, 2015; Allegranti & Silas, 2014; 2016). This study aims to build on empirical arts-science intersections and to contribute to knowledge production through practice-based research. The quantitative component of the research will be presented in a more scientifically conventional way to allow for sufficient detail to be communicated in the later Chapter 6: Embodying Numbers (pp. 139-173).

4. 1 Fieldwork Stage 1: Data Collection

4.1.1 Research Participants

Two groups of participants were recruited for *Fieldwork Stage 1*: (i) a ‘non-trained mover’ group (NHS Lab) formed by 7 multidisciplinary (MDT) clinicians practicing within a specialist perinatal mental health service in East London NHS Foundation Trust and (ii) a ‘trained-mover’ group (Studio Lab) formed by a combination of 6 dance movement psychotherapists and dance practitioners. The terms ‘trained’ and ‘non-trained’ are used to distinguish between research participants for whom the moving body is central to their training and professional orientation (Studio Lab group) and those who have limited or no training in embodied practice (NHS Lab group). This distinction between the research participant groups follows Jola’s (2012) example of audience research on kinaesthetic empathy, where she differentiates between ‘expert’ audience members (professional dancers) and ‘non-expert’ spectators (general public). The ‘trained/non-trained mover’ distinction is not made here in a deterministic sense, nor does it aim to privilege DMPs over the MDT clinicians. Questions surrounding the nature/nurture involvement in participants’ experiences of kinaesthetic empathy, will be discussed in relevance to the research findings and with reference to potential innate and/or learned embodied mechanisms manifesting in relationship. A full elaboration on this subject is offered in Chapter 8: Interdisciplinary Discussion (pp. 193-218).

4.1.1.1 NHS Lab

The Mother and Baby Unit, within the City and Hackney Centre for Mental Health (East London NHS Foundation Trust), was identified as a potential research site through the primary investigator's clinical practice, as a dance movement psychotherapist, in the setting. The NHS Lab was established after a consultation period with senior practitioners and service management including the Consultant Psychiatrist, Modern Matron, Ward Manager, Head Arts Therapist and Social Inclusion Service Manager. A service-wide email survey was conducted to assess clinicians' interest in participating in the study and thus the overall project viability for the unit. Approximately 20 clinicians submitted expressions of interest (by return of email to the researcher) to be involved in the project. This consultation period was followed by a lengthy ethical approval process in line with the East London NHS Foundation Trust Research and Development protocols and the University of Roehampton ethical procedures (see Ethical Considerations section 4.1.3 pp.73-75). The group of clinicians participating in the study was recruited via established service communication pathways such as internal emails, team meetings and educational talks and presentations. Ten clinicians volunteered their participation during the research recruitment process. Of those potential participants, one withdrew due to practical difficulties attending the research workshops. Another clinician withdrew after considering her engagement in the EEG experimentation. A third participant withdrew after the first session of her involvement in the study due to a change in her personal circumstances preventing her from committing to the project. The remaining clinicians (N=7) formed the NHS Lab group. 5 participants completed the entire research study. 2 participants were excluded from the EEG experimentation (see inclusion criteria in 4.1.3 Ethical Considerations pp.73-75) but engaged in the focus group workshops. The NHS Lab group comprised 1 male and 6 female participants. Clinical roles included: Mental Health Nursing (N=2), Occupational Therapy (N=1), Social Work (N=1), Life Skills Recovery (N=1), Art Therapy (N=1) and Clinical Administration (N=1). Research sessions took place in designated meeting rooms and office spaces within the Mother and Baby Unit in City and Hackney Centre for Mental Health.

NHS Lab group	Total
Whole study participation	5
Focus groups participation only	2
Full sample	7

Figure 4: NHS Lab group sample

The Mother and Baby Unit is a twelve-bed specialist perinatal service accommodating mothers experiencing moderate to severe mental health difficulties during their pregnancy or

within the first year after child birth. This family-centred service aims “to ensure that women who require admission and treatment can remain with their baby enabling the mother and baby to develop their special bond” (East London NHS Foundation Trust). Given the nature of the client group (mothers and infants) and the developmental focus in the therapeutic treatment, conducting a study on embodied empathy in the unit seemed fitting. The clinical team ethos is based on the provision of holistic care for mothers and their babies through collaborative and multi-disciplinary assessments and therapeutic interventions. Moreover, the psychological needs of the mother and the wellbeing of infants, as well as their dyadic bonding and attachment, during this critical developmental stage are of equal importance to the service provision. Therefore, inviting clinicians to participate in a study on embodied empathy was considered relevant to the reflective practice model adopted within the service.

Despite an enthusiastic reception by the multidisciplinary team however, the logistics of setting up the research study proved challenging. The primary difficulty involved clinicians’ shift patterns and the condition (imposed by the trust research board) that participants should engage in the study outside their contracted work hours. The trust’s assessment of the proposed research study deemed the project as ‘non-clinical’ due to its involvement of staff members instead of service users. Thus I became curious about the hierarchical status quo of what constitutes ‘clinical’ research within medical and institutionalised settings. The interpretation of a proposed research study investigating clinicians’ embodied empathic responses as ‘non clinical’ is arguably a contentious view. On the contrary, the multidisciplinary team, involved in the research, viewed the project within the context of reflective practice and service development, with potential benefits to both staff and service users. This mismatch in perception, between senior management and front line staff, raises interesting questions regarding the political structure of a complex hierarchical system, such as the NHS. A recent consultation paper on ‘Successful Employee Engagement in the NHS’ (Dromey, 2014) highlighted that senior leadership ‘sets the tone’ in the overall organisational culture. The same consultation stressed the need for ‘a strong employee voice’: “Employees need to be able both to raise concerns if they have them, to offer suggestions for the improvement of their services, and to be involved in decision-making across the trust as a whole” (Dromey, 2014, p.5). A large multimethod study across the English NHS (Dixon-Woods et al, 2013) found that even though quality of care is a priority for both senior management and front line staff, multiple inconsistencies were

observed across the NHS with regards to organisational culture and patient experience. The authors conclude:

It is essential to commit to an ethic of learning and honesty, to work continually to improve organisational systems, and to nurture the core values of compassion, patient dignity and patient safety through high-quality leadership. This implies equal attention to systems, cultures and behaviours: setting coherent and challenging goals and monitoring progress towards them; empowering staff to provide high-quality care and providing them with the means to achieve this through routine practice and innovation; and exemplifying and encouraging sound behaviours.

Dixon-Woods et al, 2013, p. 9

The engagement of staff members in this study is arguably a positive step in the direction of empowering clinicians to reflect on their clinical practice and further explore compassionate care experientially. In response to the restriction discussed above, regarding clinicians' participation in the research study, the Modern Matron of the unit worked closely with the primary investigator to develop a workable shift rota.

4.1.1.2 Studio Lab

The Studio Lab group (N=6), included 4 registered dance movement psychotherapists (Association for Dance Movement Psychotherapy UK) and 2 dance practitioners. Of the 4 DMPs participating, 3 were female therapists and 1 was a male therapist. 3 of the dance movement psychotherapists recruited were practicing clinically, in different settings, at the time of their participation in the research project. The fourth registered dance movement psychotherapist practiced within healthcare in a different clinical role. The 2 dance practitioners recruited were women. Their practice at the time of the research project involved performance and choreography work as well as dance teaching. Participants in the Studio Lab group had received formal training in embodied practice either within a clinical context (DMPs) or in performance (dance practitioners) within the University of Roehampton (MA Dance Movement Psychotherapy and MFA Choreography respectively). Studio Lab participants were recruited via email invitation. Approximately 50 potential participants were contacted during the recruitment stage for the Studio Lab group. Participants were selected based on inclusion criteria (See Ethical Considerations section 4.1.3 pp.73-75) and their availability to commit to the study as part of *Fieldwork Stage 1*. Research sessions took place within the Psychology Department Cognitive Lab and a designated lecture room within Whitelands College, University of Roehampton.

Studio Lab	Total
Whole study participation	6

Figure 5: Studio Lab sample

Even though the Studio Lab participants shared a background in embodied practice the difference in perspective (clinical practice and performance work), at times, became a prominent feature during the focus group experimental process. My intention was not to put these two different approaches in competition with each other, but rather to facilitate a dialogue about the potential meeting points between dance movement psychotherapy and performance work. This potential convergence was also mirrored in the participants' life experiences. Of the 4 DMPs participating in the study 3 had an extensive performance background while a fourth had recently been involved in a research performance project involving screendance. Of the 2 dance artists taking part in the project one had studied psychology to undergraduate level. The second dance practitioner was involved in community dance projects. The similarities and differences between dance as psychotherapy and dance as performance are discussed in Chapter 8: Interdisciplinary Discussion (pp. 193-218) as part of the interdisciplinary formulation of kinaesthetic empathy within this research thesis.

4.1.2 Fieldwork Design

The two research groups completed the *Fieldwork Stage 1* study separately and consecutively. The data collection for the Studio Lab was carried out first (21 October 2013 - 12 December 2013) extending over 16 weeks. The NHS Lab fieldwork (10 April 2014 – 16 June 2014) was carried out over 15 weeks. The research design involved three components: (i) 4 embodied practice focus groups (a four-week 'intervention' programme), (ii) EEG measures (pre/post completion of the focus group programme) and (iii) a research questionnaire (pre/post completion of the focus group programme).

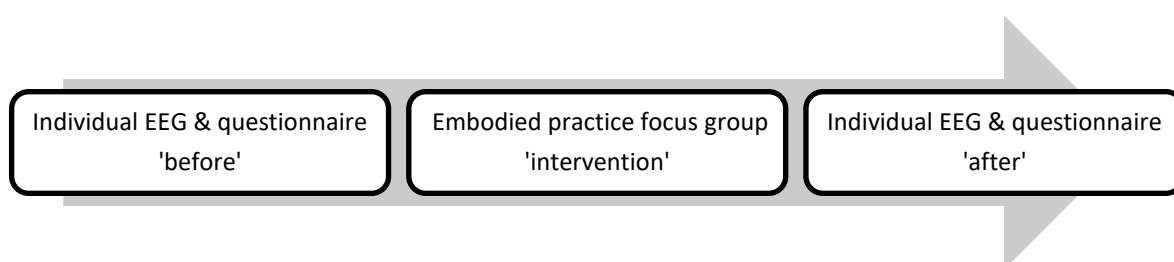


Figure 6: Fieldwork Stage 1 design

4.1.2.1 Embodied Practice Focus Group

In the first contact with participants I outlined details of the embodied practice programme, including time and location, appropriate clothing to be worn and examples of experiential work involved. The embodied practice approach was based on the theory and practice of dance movement psychotherapy (DMP). As a form of arts psychotherapy, DMP is an Allied Health Profession alongside dramatherapy, music therapy, art psychotherapy and play therapy. DMP is practiced in health care, educational and community settings among others. The arts psychotherapies are regulated by national professional bodies and are recommended by the National Institute of Clinical Excellence (NICE) as beneficial interventions for diagnoses such as schizophrenia, dementia and autism. Registered dance movement psychotherapists undergo rigorous vocational training to post-graduate level and are required to maintain an up-to-date licence which is granted on the basis of on-going supervision, DBS (Disclosure and Barring Service) clearance, continuous professional development and adherence to the code of conduct of the Association for Dance Movement Psychotherapy UK and the UK Council for Psychotherapy. As the principal investigator and qualified dance movement psychotherapist in this research project, I informed participants of my registered professional status and compliance with the regulations outlined above.

The embodied practice focus group programme was carried out over a series of 4 weekly workshops. Each session focused on a particular DMP construct and was structured so that participants were encouraged to work within their own abilities. Research participants had the opportunity to explore (i) their own movement range and preferences drawing from the Laban Movement Analysis effort qualities (Guest, 2005), (ii) intersubjective movement improvisation including exploring the use of mirroring and dialogic techniques (Allegranti, 2015), (iii) safe use of touch and (iv) embodied perspectives and positions using group improvisation (Parker & Best, 2005). Safe practice was central to the design of this project and to this end each session included a guided warm-up, a structured movement exploration and time for reflection and closure at the end. Reflective focus group discussions were audio recorded for the purposes of qualitative analysis of the emerging themes of embodied empathy in clinical encounters. Participants' verbal accounts were recorded on a digital dictaphone and transcribed in verbatim form.

Organising the embodied practice investigation as part of a 4-week programme, drawing from specific dance movement psychotherapy constructs and approaches, was not an attempt to develop a manualised (or exhaustive) model. Due to logistical restrictions, including time/space and participant availability, limiting the embodied practice workshops to four sessions was deemed both necessary and sufficient. Similarly, the selected experiential constructs (movement analysis, mirroring, touch and embodied perspective taking) were implemented as guiding suggestions for exploration rather than as outcome measures. It is recognised that other embodied tools and approaches, used in the field of DMP, such as the Kestenberg Movement Profile and Authentic Movement may be considered by some, as equally important agents of kinaesthetic empathy. However, covering a broad base of the DMP praxis, the selected embodied constructs encouraged participants to engage with their kinaesthetic understandings of personal, relational and systemic material emerging in their clinical encounters.

In the first workshop, Laban Movement Analysis (LMA) (Guest, 2005) was explored in relation to the effort qualities of time (sudden/sustained), weight (strong/light), space (direct/indirect) and flow (free/bound). Research participants experienced these concepts from a personal and relational perspective attending to their own preferences and movement range. During the second research workshop, mirroring encouraged participants to explore relational material emerging through leading, following and co-created improvisations. Attending to touch, in week three, highlighted to participants' potential power constructs involved in passive, active and dialogic contact exploration. The exploration of touch was also considered in relation to such inpatient clinical interactions as manual handling and physical restraint. In the final research workshop participants explored embodied perspective taking (after Parker & Best, 2005) drawing from different embodied positions: professional identity, client perspective, environmental impact and a private sense of self (outside of the clinical context). For the purposes of the investigation a set structure, involving a guided warm-up, a sequence of timed experientials (improvised tasks) and a 20-30 minute reflective group discussion, was developed. Even though the research structure was set by me, participants were free to interpret and apply the research tasks in their own embodied way. For example during the first workshop, participants were invited to explore the sequence of effort polarities individually and relationally in 5-minute intervals:

Explore time (sudden/sustained) individually
Transition

Explore time (sudden/sustained) relationally
Transition
Explore flow (free/bound) individually
Transition
Explore flow (free/bound) relationally
Etc...

Even though the direction was the same for all participants, individuals experienced the embodied exploration in a personalised way. For example, some participants chose to divide the 5 minute interval, set out for each task, between polarities, whereas others chose to shift spontaneously from one polarity to the other across the 5 minutes. Others responded to the overarching effort without thinking about individual polarities etc. This example illustrates an alignment between the embodied research practice and the phenomenological lens of this investigation. The experiential tasks implemented in this study acted much like an open phenomenological questioning, encouraging participants to move their responses to questions such as: ‘what is the experience like’ and ‘what meaning is created by the experience’ (Kaylo, 2006). In this sense, participants were not expected to arrive at a predetermined truth through their embodied explorations. Embodied experience was unpacked through the focus group discussions, which was recorded on a digital dictaphone (Olympus digital Voice Recorder VN-3100PC), drawing on individual and collective co-created material (for the complete Embodied Practice Focus Groups protocol see Appendix 9 pp. 20 – 23).

This separating out of individual DMP constructs is, of course, artificial and only necessary for the purposes of empirical investigation. For example, whilst participants were focusing their attention on the DMP construct of mirroring, they were also engaging with effort qualities, perspective taking and touch, because embodied experience is inherently multi-dimensional and corporeal. Moving bodies *become* in relationship (Allegranti, 2015), that is they are not fixed or isolated entities. To further unpack the above example, in attending to my experience of mirroring, it is not possible to actually ‘switch off’ the other layers of my embodied experience: my breathing, posture, spatial position, rhythm, sensory stimuli, my connection to gravity, the effort I put into moving through space and time, my contact with others and the environment etc. Attending to a certain embodied experience relates to a process of *bringing into awareness* or consciousness (in Merleau-Pontian terms); much like the lighting director turning the spotlight onto one performer, while other actors are still performing in the background. However, even though the constructs overlap and are

not orthogonal, the focus on each separate aspect isn't completely artificial. Therefore, the data produced from the embodied practice focus groups does not concern itself with the researcher's observations or evaluations of the actual DMP experientials; nor does it constitute measurable findings, in a positivist sense. The gathering of data in this context involves participants' lifeworld narratives (after Eckartsberg in Valle, 1998) encapsulating their meaning making, that is, their embodied understandings of kinaesthetic empathy as mediated by the embodied practice focus groups. Manen (1990) problematizes the notion of data collection in his analysis on researching lived experience:

In some respect it is quite misleading to talk of "data" [...] particularly since the concept of "data" has quantitative overtones associated with behavioural and more positivist social science approaches. And to speak of "gathering" and "collecting" human science data, as if one is speaking of "objective information", may admittedly be an attempt to borrow the respect that the so-called "hard" sciences have enjoyed. And yet it is not entirely wrong to say that the methods of conversational interviewing, close observation, etc. involve the collecting or gathering of data. When someone has related a valuable experience to me then I have indeed gained something, even though the "thing" *gained* [author's italics] is not a quantifiable entity.

p. 53

In this sense, embodied "data" were gathered via the focus group discussions within each research workshop. The relationship between verbal and non-verbal articulation and meaning making is denoted in participants' reflective accounts mediated by creative writing, drawing and conversational sharing.

Even though both participant groups experienced the same embodied practice programme the research process was influenced by different factors. For example, the NHS Lab took place within a clinical setting familiar to participants as a work place. The room used for the embodied workshops was in fact the 'ward round' room, the space where service users are reviewed weekly as part of multidisciplinary and care plan approach (CPA) meetings. Participants commented on the transformation of the room from a rigid and mostly highly charged forum to a relatively open space for creative exploration and exchange. Even though space for movement was created, a formal and clinical undertone remained. Participants moved in their everyday clothes and kept their shoes on. As a result, the movement explorations unfolded predominately from a standing or sitting position, with only a few exceptions where participants explored the floor. Natural light was not available (the blinds were drawn) as the only window in the room faced the unit garden, often accessed by

service users. The NHS Lab study was carried out in the summer months. The space was crowded with heavy board room furniture pushed to the sides leaving a limited space, in the centre of the room, for the experiential work. A few movement props (massage balls, scarves, stretch bands) and arts and writing materials were provided by the researcher. Recorded music was used only for the warm-up, played through a portable cd-player belonging to the hospital. Participants had an established working relationship with each other and with myself, as a member of the multidisciplinary team of the ward. For the NHS Lab participants engaging with DMP constructs was a new experience. Most participants described their engagement in this work as a *learning* process.

For the Studio Lab, research workshops took place in a designated lecture room at the University of Roehampton. Even though a familiar location, as all participants had completed part of their academic/vocational training there, the actual room used for the research was neutral to individuals. A large carpeted lecture hall, with views over the university grounds, was cleared from chairs and tables allowing for considerable space for the experiential work. Natural light was allowed into the space. Participants wore comfortable, loose clothing and engaged in the experiential work barefoot. All levels (standing, sitting, lying) were explored including different surfaces of the room such as walls, floor and chairs. The Studio Lab was carried out in the winter months, therefore considerable attention to the warm-up was given. Props (balls, stretch bands) and music were used in the warm-up only. The lecture room sound system was used for playing music. Arts and writing materials were provided by the researcher and used for the reflection parts of the session. Some participants knew each other from previous collaborations in the field, however there was no pre-existing established shared identity for this group of individuals. All participants knew me personally from a professional or social context. As Studio Lab participants comprised the ‘trained-mover’ group their responses to engaging in this work involved a *revisiting* into experiential work as an in-depth exploration of their existing knowledge.

The similarities and differences found in the two participant groups raise questions about their influence on the emerging research findings. For example the different ‘permissions’ embedded within the two Lab contexts inevitably inform the shaping of the investigative process. It may be argued that similarities and differences are not only contingent on the research participant groups but also on the individuals themselves. In the same way that each Lab context is unique to its group of participants and influencing factors constructing it, so is experience unique to each person living it. For this reason, these

similarities and differences are not reported on for ‘diagnostic’ purposes but rather as observations on the multiplicity and diversity embedded in the research process.

Participant attendance varied between groups and individuals (see Fig. 7 below). Even though optimal participation in the study involved completion of the entire embodied focus group programme, reported absences are not viewed as detrimental to the qualitative formulation of the research findings. This is due to the fact that phenomenological conceptualisations were contained within the focus group discussions regardless of the number of participants attending. The qualitative component of the analysis was further supplemented by the qualitative research questionnaire, which was completed by all research participants twice; once before and once after completion of the embodied practice programme (see 4.1.2.3 Qualitative research questionnaire pp. 71-73).

Lab	Total No	Weekly attendance	Full programme completion	Partial programme completion	Absences
Studio	6	5	2	4 participants = 3 out of 4 sessions	Illness/booked holidays
NHS	7	2- 7	2	2 participants = 3 out of 4 sessions 3 participants = 2 out of 4 sessions	Illness/duty rota issues

Figure 7: Embodied Practice Focus Group participant attendance

4.1.2.2 Electroencephalograph Measures (EEG)

Electroencephalography is a non-invasive electrophysiological technique used to measure electrical activity recorded from the surface of the participant’s scalp. More specifically, EEG records voltage fluctuations as a result of current flows within the cortex of the brain (Dickter & Kieffaber, 2014). EEG is not capable of measuring signals from individual neurons in the brain but rather it measures the summation of the synchronous activity of thousands of neurons located in the same regions in the brain. Participants are required to wear an electrode cap applied on their head similar to a swimming cap. EEG oscillations are recorded at different frequencies deriving from different parts of the brain indicating different functionality. Examples of EEG frequencies include alpha, found at the back of the brain (observed during a relaxed state, i.e. eyes closed); beta, found on both sides of the brain (observed during active thinking); gamma, (involving the somatosensory cortex) and mu (involving the sensorimotor cortex).

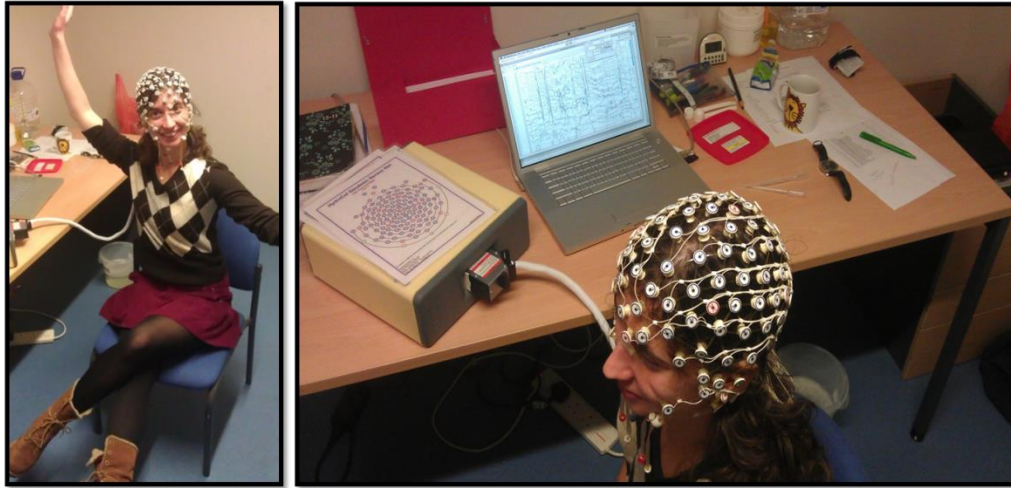


Figure 8: Research Participant during the EEG

In designing the EEG experimentation for this project I drew on existing studies (Silas 2009, Oberman et al. 2007, Muthukaraswamy et al. 2004) investigating EEG ‘mu rhythm’ suppression (during movement processing) as an index of mirror neuron system (MNS) activation. Changes in the power of the mu frequency (8 -13 Hz) are thought to reflect recruitment of motor processes in the brain (Oberman et al., 2005). Specifically a decrease in power at the frequency is thought to reflect an underlying desynchronisation of neuronal firing in cortical motor areas which, in turn, is associated with increased processing. The summation of asynchronous firing of large populations of neurons results in a decreased amplitude when measured on the surface of the scalp. The full experimental study is outlined in detail in Chapter 6: Embodied Numbers (pp. 139-173).

In the first contact with participants I informed them about the length of the experiment and the methods used to place electrodes on their heads. These details were also provided on an information sheet. Appointments for the EEG session were made subsequently. Before the EEG session started I showed participants the type of electrodes I would be using and explained how the system worked. The participants were told that they could opt out at any time during the testing session. It is acknowledged that it may be harder to withdraw when attached to electrodes, with participants deciding to stay uncomfortable rather than having to disrupt the procedure. For this reason, I took particular care at the beginning, and at various points throughout the experiment, to emphasise to the participant that they could leave at any point during the testing session.

After completion of the experiment and removal of the electrode net participants were debriefed and were encouraged to come back at a later time to take a look at the aggregate

data following analyses. They were also given time to reflect on their felt responses (Gendlin, 2003) during the experimental process through reflective writing and discussion with the researcher and research assistants. This reflective sharing aimed to honour participants' lived experiences and ongoing understandings of kinaesthetic empathy.

For the Studio Lab, EEG testing took place within the Cognitive Lab of the Psychology Department at the University of Roehampton. This site allowed for a smooth facilitation of the EEG testing with easy access to equipment and technical support if required. For the NHS Lab, EEG sessions took place in designated meeting rooms or office spaces. Every effort was made to replicate optimal testing conditions according to laboratory protocol (room temperature, noise levels and electrical equipment interference); however this was not always to the most desirable standard. A further discussion of the experimental strengths and limitations of the EEG study may be found in Chapter 6: Embodied Numbers (pp. 139-173).

4.1.2.3 Research Questionnaire

The qualitative research questionnaire was completed twice by each participant, once at the beginning of the study (before any involvement in the movement workshops focus groups) and then after completion of the movement programme. The questionnaire was designed to capture participants' understanding and conceptualisation of embodied empathy, as they experienced it in their clinical encounters. For this purpose, three types of questions were employed: (i) 7 open questions where participants gave their own independent views, (ii) 4 closed questions including scaled answers and (iii) 2 multiple choice questions. Furthermore, the 'pre/post' completion of the research questionnaire aimed to investigate potential shifts in participants' views of embodied empathy as a result of their participation in the embodied focus group programme. (The questions appearing in the table below, Fig. 9, are presented in a summarized format. See Appendix 10 pp. 24 – 27 for the complete research questionnaire).

Type of question	Question	Answers
Open	What is your definition of empathy?	
	Outline the main reasons you think empathy is/is not important in your clinical work.	
	Outline the main reasons you think non-verbal communication/embodiment is/is not relevant in your understanding of empathy.	
	Clinical examples in relation to your answer in the question above.	
	Outline relevant training/support you are receiving/have received as well as ongoing professional development needs you can identify in relation to your clinical interpersonal experiences	Training/professional support received _____ Ongoing training/professional needs identified _____
Closed	How do you feel participating in this study might support your clinical practice?	
	Comments or insights at this stage of the research process.	
	How important is the concept of empathy in your clinical work?	No (importance/relevance) Little (importance/relevance) Undecided (importance/relevance)
	How relevant do you think non-verbal communication/embodiment is in your understanding of empathy?	Some (importance/relevance) Most (importance/relevance)
	How relevant is the following statement in your clinical work: "I am able to employ empathy in my clinical encounters to a level I am comfortable with"?	
Multiple choice	How relevant is the following statement in your clinical practice: "I feel I have received/I am receiving enough training and/or support in dealing with challenging interpersonal experiences with clients?"	
	Which of the following concepts do you consider as enhancing your ability to empathically relate to your clients?	Language, Facial expressions, Eye contact, Tone of Voice, Spatial awareness, Gender, Cultural considerations, Hand gestures, Body language, Listening, Feeling listened,
	Which of the following concepts do you consider as hindering your ability to empathically relate to your clients?	Sexual orientation, Age, Religious beliefs, Moral ideas, Respect, Feeling respected, Position of authority, Personal experience, Physical environment, Self-awareness Confidence, Professional orientation Other (please enter)_____

Figure 9: Research Questionnaire

Frequently used empathy scales in medical and psychological research involve assessment or diagnostic tools, such as the Empathy Quotient (EQ) (Baron-Cohen, 2004) and the Measure of Emotional Empathy (QMEE) (Mehrabian & Epstein, 1972), or the more recently developed psychometric self-reporting questionnaires like the Toronto Empathy Questionnaire (TEQ) (Spreng et al, 2009), an amalgamation of various emotional empathy scales. Unlike these scales where affective and cognitive mechanisms are assessed towards an elucidation of empathic response in social contexts, my study is concerned with participants' own understandings and experiences of empathy in the clinical context. In other words, instead of measuring participants' empathic responses in relation to the embodied practice

intervention, I am interested in participants' evolving understandings of embodied empathy over the course of their participation in this study. As Finlay (2009) suggests the phenomenological method concerns itself primarily with three core questions: (i) what is the experience like, (ii) what is the meaning of the experience and (iii) how does the lived world present itself. The research questionnaire encouraged participants to language their relational encounters and meaning making of their clinical experience as practitioners. In addition, participants were offered the opportunity to explicate their formulation through the use of examples and multiple answering modes.

In line with the phenomenological framework of this investigation, participants were involved in the decision making regarding completion of the research questionnaire. Some participants chose to complete the questionnaire 'blind', that is without comparing their answers pre and post the embodied practice programme. Another cluster of participants requested a photocopy of their completed questionnaires (before), thus revisiting and adjusting their conceptualisations (after) across the length of the study. A third group of participants issued the questionnaire electronically often submitting the same answers where there was no perceived pre/post change in understanding of the researched concepts. A potential criticism regarding this flexible and transparent approach in the facilitation of the research questionnaire might be about the risk of bias involved in participants' responses (particularly for those participants who reviewed their original answers before submitting the final questionnaire). However, as I will further discuss under 4.1.3 Ethical Considerations (pp.73-76), issues of ownership, of the co-created research material, informed the data collection approaches in this study. Rather than treating the research questionnaire as a testing process, participants were supported to use their agency in communicating their views in a comfortable and convenient way. Time limitation, participants' varied writing skills and use of English as a second language (in four instances) were also taken into account during the facilitation of the qualitative research questionnaire.

4.1.3 Ethical Considerations

Following project confirmation (May 2013) the study was extensively reviewed by the Ethics Boards of Roehampton University Psychology Department and East London NHS Foundation Trust Research and Development Department. As the principal investigator of this study I abide to the professional and ethical codes of practice as outlined by the

professional bodies I am a member of (Association for Dance Movement Psychotherapy UK, UK Council for Psychotherapy), my academic institution (University of Roehampton Department of Psychology) and the clinical setting within which I practice (East London NHS Foundation Trust).

The study was carried out with optimum regard to the health and safety of participants including hygiene considerations for the EEG session and physical and psychological safeguarding in relation to the movement intervention, questionnaire and focus group discussions. All data collected during *Fieldwork Stage 1* (for both Studio Lab and NHS Lab participants) was treated confidentially with additional security measures in place for optimum data protection. Detailed consent forms were secured from all participants before any involvement in the research project (see Appendix 1 pp. 3 – 5). Additional consent was secured for the electroencephalograph sessions (see Appendix 5 pp. 13 – 14) ensuring participants fulfilled the recruitment criteria. Two exclusion criteria were put in place for the recruitment of participants in the EEG: (i) pregnancy and (ii) infectious skin conditions. Pregnant participants were excluded from the EEG due to ethical considerations around consent involving unborn children or foetuses. Participants with infectious skin conditions were excluded for health and safety reasons. The six Studio Lab participants met all inclusion criteria for the EEG. In the NHS Lab group one participant was excluded from the EEG due to her pregnancy. Another participant was excluded on her request, due to a skin inflammation condition known as eczema or dermatitis. Even though eczema did not fulfil the exclusion criteria, the participant felt that the saline solution used in the study would be uncomfortable for her scalp. Even though these two NHS Lab participants were excluded from the EEG experimentation, they were able to engage in the embodied practice focus groups and completion of the research questionnaire.

Throughout the research study participants were informed that their participation was voluntary and that they had the right to withdraw from the process at any point (with data collected up to the point of their withdrawal used in aggregate form). Participants were issued with additional information on the aims and objectives of the study as well as access to further support should they require it as a result of their participation in this study (See De-briefing Information in Appendix 3 pp. 9 – 10). Direct contact details of independent parties were also provided for further guidance and support.

Even though confidentiality was maintained throughout (all participants' accounts were anonymised), it is important to consider the ethical implications of my personal roles and positions in this study as researcher, dance movement psychotherapist and member of the clinical multidisciplinary team. For example, in the context of the NHS Lab group, with the exception of one participant, I was familiar with clinicians through a collegial multidisciplinary team working context. Participants were familiar with my role as a dance movement psychotherapist in the Mother and Baby Unit providing weekly group and individual sessions on the ward (since 2010). Even though a member of the broader multidisciplinary team, I was not in fact based on the ward, as my professional role was housed under the Arts Therapies Department based elsewhere. In this sense my position on the ward, as an external collaborator, placed me at a distance from the internal team dynamics of the core Mother and Baby Unit clinicians. Therefore, the issue of proximity to the clinical team was contained within my geographic location within the hospital and my role as an external collaborator and member of the multidisciplinary team. However, I became aware of an underlying tension, emerging in my shifting roles as colleague and researcher, during the recruitment process of the NHS Lab group. Up to that point my exchanges with colleagues had been located within the professional and clinical parameters of multidisciplinary liaison. As part of this study I was now additionally approaching colleagues from a research perspective. I became aware of issues linked to authority and power dynamics embedded within the researcher/research participant relationship: 'Will the research findings be fed back to the team', 'who will have access to my statements', 'how will my data be analysed'. These issues were openly discussed with participants during the recruitment process and a culture of transparency and dialogue was cultivated throughout the research study. The phenomenological approach, adopted in this study, placed participants in the co-researcher position as opposed to that of the 'subject', traditionally adopted within positivist paradigms. Thus, the co-researcher role acknowledged participants as equal investigators, in the co-creation of embodied knowing, alongside the primary researcher: we both started from not knowing and *moved* towards discovering in collaboration.

Allegranti (2015) describes this approach as a process of *democratising* the research space. However, the issue of equality becomes particularly problematic when it comes to the interpretation and authorship of the research findings. Allegranti (2015) comments on this in the following example from her embodied interdisciplinary research: "I acknowledge the difference between my '*intention to democratize the space*' [author's emphasis] and the fact

that the ultimate moral (and practical) responsibility for the outcomes of this project and how it is ‘edited’ together lies with me” (p. 63). As Allegranti explains the intention to democratise the research space, does not presuppose a de facto egalitarian dynamic in the researcher/participant relationship. Nor should this inherent hierarchical tension prevent researchers from addressing power dynamics within the research process. Shifting between my different roles as DMP, researcher and member of the multidisciplinary team (Parker & best 2005), whilst acknowledging the tensions emerging through this process (Allegranti 2015), allowed me to maintain reflexivity, ethical accountability and integrity. This ethical stance of reflexivity and transparency was applied throughout *Fieldwork Stage 1* procedures for both Lab groups.

All research participants were involved in and consulted on the developing research progress in *Fieldwork Stage 1*. This included establishing mutual respect during research exchanges and dialogue. Upholding confidentiality and voluntary choice of participation (including the right to withdraw from the research process) were revisited and confirmed at different stages of the project. In addition, participants were able to review the focus group transcripts maintaining the right to remove sensitive excerpts of their statements from the final analysis.

As already discussed, the EEG experimentation added another layer of complication in the researcher-participant dynamic. The potential objectification of research participants embedded within the experimental process was unpacked with participants during the EEG session debrief. The right to withdraw during the testing process was also emphasised at different stages of the experimental testing. All research data has been stored securely either in locked cabinets (hard documentation) or password protected (digital files). Data will be retained for at least ten years, according to the Code of Good Research Practice of the University of Roehampton.

4.1.4 Analysis Procedures

4.1.4.1 Qualitative analysis

The qualitative analysis of the research data involved 8 (4 per research group) transcripts in verbatim form deriving from the focus group discussions as part of the embodied practice workshops (See Appendix 18 pp. 48 – 88 for Focus Group Transcripts). According to

Eckartsberg's model of Empirical Existential Phenomenology (EEP) the following stages of analysis were completed:

1. Identifying *key statements* and *recurrent concepts* per transcript
2. Identifying the *overarching themes* per transcript
3. Developing the *central meaning configuration* per group
4. Reflecting on findings and *reviewing* similarities and differences between groups
5. Developing the *final thematic categories* (and sub-categories) of kinaesthetic empathy

The same analysis procedure was followed for the qualitative component of the research questionnaire. Excerpts of the qualitative analysis process may be found in Appendix 19 pp. 89 – 93. The qualitative findings of *Fieldwork Stage 1* are presented in Chapter 5: Embodied Words (pp. 84-138).

4.1.4.2 Quantitative analysis

For the quantitative analysis of the EEG experimentation a systematic procedure was followed including pre-processing of the EEG waveform, extraction of EEG measures and carrying out statistical tests to explore pre and post intervention Mu rhythm modulation. The EEG analysis methodology carried out is outlined in detail in Chapter 6: Embodied Numbers (pp. 139-167). The quantitative components of the research questionnaire were analysed using the Excel software and are also discussed in Chapter 6 (pp. 168-173).

4.2 Fieldwork Stage 2: Embodied Performance

Fieldwork Stage 2: Embodied Performance was developed following completion of *Fieldwork Stage 1: Data Collection* with 5 Studio Lab participants. It involved a series of 10 compositional workshops culminating with a live dance theatre performance and visual arts exhibition entitled */mu/*. The live performance piece involved a structured improvisation event capturing performers' unfolding kinaesthetic experiences in relation to each other and in response to the audience participation. The photography and art exhibition depicted the compositional development of the performance work in collaboration with two photographers and a visual artist. As discussed in Chapter 3: Interdisciplinary Methodology (pp. 47-57) this multi-layered performance event created a platform for artistic interdisciplinary dialogue on the multiple ways the 'story' of kinaesthetic empathy may be told (photography, art, embodied performance). It also allowed me to communicate my research project beyond the

sphere of academia, which arguably may be accessed by a few, by reaching out directly to the public and creating the possibility for a shared kinaesthetic empathic experience. A preview of the performance was shown to a small group of invited guests as an experimental platform for performers and an opportunity to engage in a dialogic unpacking of the work.

4.2.1 Research Participants

Participation in the embodied performance work was offered to the Studio Lab participants. This was due to practical and ethical limitations involving the NHS Lab group, including geographical location of rehearsals (University of Roehampton), timing of *Fieldwork Stage 1*, participant availability and (most crucially) participant consent to engage in a live performance context. For the Studio Lab participants extending the research study to embodied performance work seemed a natural progression, due to their background in embodied practice and performance. I do not mean to suggest here that performance work, within practice-based research, should only be restricted to experienced movers. However, it is acknowledged that a live dance theatre performance with non-trained movers may have been a tall order for participants in the limited time available. Alternative options for potentially capturing NHS Lab group's embodied performances of kinaesthetic empathy were considered, such as video or photography work, however space and time limitations in accomplishing this (within the NHS) prevented me from pursuing this possibility. Of the 6 Studio Lab participants completing *Fieldwork Stage 1*, 5 consented to participate in *Fieldwork Stage 2*. The sixth participant declined the invitation due to work commitments and moving out of the country.

4.2.2 Fieldwork Design

Following Allegranti's (2015) example, this study implemented embodied practice both as a methodological approach within the research process (Embodied Practice Focus Group for *Fieldwork Stage 1*) and as a discursive tool exploring and articulating themes of embodied empathy, through the live dance theatre performance (*Fieldwork Stage 2*). In the same way that written analysis, or statistical interpretations of the findings are conveyed, in this thesis, through language (see Chapter 5 pp. 84-138) and numbers (see Chapter 6 pp. 139-173), embodied performance offered a third vehicle in articulating the participatory kinaesthetic experiences of empathy within an artistic context (see Chapter 7 pp.174 – 192).

The term ‘dance theatre’ denotes a unique blend of dance and dramatic performance. Developed in Central Europe in the 1920s the dance theatre genre was pioneered by German choreographer and performer Pina Bausch with her company Tanztheater Wuppertal. On the company’s online website Norbert Servos (Translated by Steph Morris) describes how in Bausch’s pieces “the players did not merely dance; they spoke, sang - and sometimes they cried or laughed too” (<http://www.pina-bausch.de/en/>). He goes on to elaborate on the psychological dimension of Bausch’s performance work:

Hers is a world theatre which does not seek to teach, does not claim to know better, instead generating experiences: exhilarating or sorrowful, gentle or confrontational - often comic or absurd too. It creates driven, moving images of inner landscapes, exploring the precise state of human feelings while never giving up hope that the longing for love can one day be met. Alongside hope, a close engagement with reality is another key to the work; the pieces consistently relate to things every member of the audience knows; has experienced personally and physically.

Tanztheater Wuppertal Pina Bausch website

The influence of Bausch’s legacy in the choreographic work for this study stems from my own lived experience through dance. Over my 30 years of immersion in the experience of dance as a student, performer, teacher, therapist and independent dance artist, I have become interested in performance contexts that position the mover/actor as both the author and narrator of their lived experience; or what Servos describes above as “the precise state of human feelings” through “a close engagement with reality” that “every member of the audience knows”. My intention in engaging with dance as an art form, in this research project, was to investigate embodied lived experience through a multi-layered kinaesthetic performance context. The embodied performances presented in the live event were authored by the movers themselves, in the same way an interviewee’s verbal response to a research question *belongs* to them. However, I am mindful that the embodied performance material developed during *Fieldwork Stage 2* was continuously shaped and re-shaped (with)in multiple relational encounters during the rehearsal and performance process: in relation to my influence in the work as researcher and performance director, as part of the movers’ co-constructed intersubjective narratives and in response to the live audience interaction. This ever-changing dynamic embedded within the performance process is akin to Allegranti’s (2015) notion of *forming*:

(T)he intersubjective body is a relational body in flux capable of embodying form through the dance movement experience. It is necessary to pay attention to the process

of flux and form. Another way of doing this is to examine how the body engages in the performance of everyday life and in the creative process of performance.

p. 39

In this research project this interplay between flux and form is investigated through participants' embodied experiences of clinical contexts (embodied practice focus groups – *Fieldwork Stage 1*) and through the live dance theatre performance (*Fieldwork Stage 2*).

The phenomenological perspective underpinning this project informed the formulation of the practice-based workshops in *Fieldwork Stage 2*. Ten embodied workshops were facilitated in preparation for the live event. Following a broad review of the emerging concepts of kinaesthetic empathy - developed during the Studio Lab focus group discussions (*Fieldwork Stage 1*) - open research questions were put to participants. Movers 'responded' through movement improvisation and individual, dyadic and group embodied narratives. The phenomenological questioning applied during this experimental stage related to the following concepts: verbal/non-verbal attunement, mirroring, polarities, language, culture, sensing and thinking through movement, intersubjectivity, observation, sameness and difference and articulating lived experience.



Figure 10: Fieldwork Stage 2 participants in rehearsal

The choreographic structure of the live dance theatre performance was developed through a similar process of phenomenological questioning. For this reason, choreography here denotes a series of set improvisation tasks inviting movers to explore research questions within live embodied performance. The following choreographic devices were used in the construction

of the live performance: (i) dyadic improvisation, (ii) solo performance, (iii) unison and repetition, (iv) audience interaction and (v) verbal/non-verbal integration.



Figure 11: Fieldwork Stage 2 participants during the live dance theatre performance |mu/

Before the performance began audience members were guided through the art/photography exhibition (see Appendices 16 and 17 pp. 38 – 47) narrating the compositional story which unfolded during *Fieldwork Stage 2*. Individual and group portraits of participants' embodied process were displayed alongside the art work created by a visual artist during the rehearsal process (See Appendix 14 for Programme Notes and full credits pp. 35 – 36).



Figure 12: Art and Photography Exhibition of |mu/

4.2.3 Ethical Considerations

For the Fieldwork Stage 2 additional consent was sought from Studio Lab participants (see Appendix 2 pp. 6 – 8). Performers were informed that they could choose to use their own name or a pseudonym as part of the performance event and material dissemination. All performers chose to use their own name as shown in Appendix 14 Programme Notes (pp. 35-36).

In relation to the interpretation of the research findings emerging from the live dance theatre performance I acknowledge that the research story presented in this thesis relates to my unfolding meaning making process and emerging understandings of kinaesthetic empathy. I align myself with Allegranti's (2015) model of *embodied ethics* to guide my interdisciplinary practice-based research, here linked to my interpretation of participants' embodied performances and audience members' responses:

(H)ighlighting potential ethical dilemmas in this project paradoxically allows my research process to more congruently reflect the way I practice as a therapist and an artist. For me, there are five key intersections: (1) co-creating knowledge; (2) being researcher and practitioner, (3) (inter)subjectivity and reflexivity; (4) holding ontological tensions; and (5) ontological interwoven-ness. I suggest that these five points contribute towards an understanding of the process of embodying ethics in practice-based research.

p. 61

Borrowing Allegranti's model above, the co-creation of knowledge here relates to the construction of the embodied performance event as well as the emerging meaning making created dialogically between researcher, performers and audience members. My overlapping roles as researcher, clinician and choreographer inform my developing understandings of kinaesthetic empathy drawing on the process of intersubjectivity and reflexivity in my engagement with research participants and findings as described above. Recognising and addressing *ontological tensions* and *interwoven-ness* is an integral concept within phenomenological research but also within interdisciplinarity, the broader methodological approach in this investigation. Interdisciplinarity invites researchers to bridge the gaps between different ontological assumptions and their respective paradigms. Therefore, in this study of kinaesthetic empathy the knowledge production has grown out of the interwoven-ness of disciplinary 'idiosyncrasies and bridges' (Nissan, 1997) including clinical, scientific and performance approaches.

4.2.4 Analysis Procedures for Embodied Performance

The live dance theatre performance was filmed and excerpts of the performance appear in this thesis in photographic form. The full video performance is submitted with this thesis in DVD format (see Appendix 23 p. 102). Participants' written (post-show) accounts of their performance experiences alongside audience member (post-show) responses were analysed thematically, towards developing a dialogic phenomenological account of kinaesthetic experiences within an artistic context. Qualitative findings of *Fieldwork Stage 2* are presented in Chapter 7: Kinaesthetic Stories (pp.174 – 192).

Chapter Five: ‘Embodied Words’ (Qualitative Findings – Fieldwork Stage 1)

This chapter presents the qualitative findings derived from *Fieldwork Stage 1: Data Collection*. Firstly, the qualitative analysis of eight focus group discussions (four per research participant group), recorded during the Embodied Practice workshops (*Fieldwork Stage 1*), is outlined in section 5.1 *Embodied Practice Focus Groups*. Secondly, the thematic analysis of the research questionnaire (5.2 *Qualitative Research Questionnaire*), which was completed pre and post the Embodied Practice programme, offers insight into participants’ evolving perceptions and understandings of kinaesthetic empathy.

5.1 Embodied Practice Focus Groups

My role as primary investigator, during the Embodied Practice workshops, was threefold: (i) outlining the research tasks, (ii) holding the experiential space and time boundary for the explorations and (iii) assuming the observer (witness) position throughout the improvisation process. The term ‘witness’ here is used to denote “a sharing in a spontaneous ‘lived’ [authors’ emphasis] moment with” co-researchers (Nunes Tucker & Price, 2010, p. 192). Therefore, my positioning during the experiential process of the Embodied Practice Focus Groups was that of curiosity and unknowing and whilst I witnessed the unfolding exchanges I remained aware of my own responses at a physical, emotional and cognitive level. The co-researchers’ experiences were unpacked during the focus group discussions. It was during this stage of the research workshops that I offered my witnessing responses to the dialogic process. As outlined in Chapter 4: Interdisciplinary Methods (pp. 58-83) the focus groups discussions were recorded on a digital dictaphone, transcribed in verbatim form and analysed after Eckartsberg’s Empirical Existential-Phenomenological (EEP) approach. The EEP approach draws attention to co-researchers’ life-world accounts in relation to how a given phenomenon is experienced and how meaning is constructed around that experience.

Following rigorous engagement with co-researchers’ ‘embodied words’, six broad concepts of kinaesthetic empathy (KE) were developed: (i) Kinetic Attunement, (ii)

Familiarity, (iii) Intersubjectivity, (iv) Socio-political Dynamics, (v) Embodied Knowing and (vi) Mirroring. These categories represent the constituent overarching conceptualisations of kinaesthetic empathy as observed within both research groups (NHS and Studio Labs). Each concept of kinaesthetic empathy further encompasses related subthemes as shown below:

KE Concepts	Subthemes			
1. Kinetic Attunement	Embodied Resonance	Polarities & Integration	Affect in Effort	
2. Familiarity	Time	Trust		
3. Intersubjectivity	Subjectivity	Co-Creation	Similarities & Differences	Dialogic Process
4. Socio-political dynamics	Power & Control	Responsibility	Culture	Environment
5. Embodied Knowing	Stepping into another's shoes	Layers of understanding	Context	
6. Mirroring	Intentionality	Observation	Mutual influence	

Figure 13: Kinaesthetic Empathy thematic development

In the following sections, I introduce each concept of kinaesthetic empathy (KE) separately whilst addressing the relevant subthemes for each category. Co-researchers' quotes will be unpacked with reference to theoretical underpinnings as well as the author's formulation of the research findings. Even though the components of KE are presented individually they are deeply interrelated and in constant flux with each other as illustrated in the wheel of KE below.

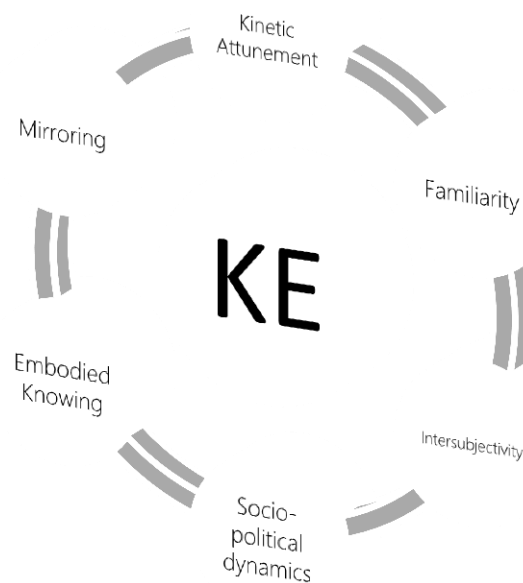


Figure 14: The Wheel of Kinaesthetic Empathy

5.1.1 Kinetic Attunement

A recurring phenomenon I became aware of early on, within the relational process of the Embodied Practice workshops, involved what Sheets-Johnstone (2009) describes as *kinetic attunement*:

A dynamically attuned body that knows the world and makes its way within it kinetically is thoughtfully attuned to the variable qualia of both its own movement and the movement of things in its surrounding world – to forceful, swift, slow, straight, swerving, flaccid, tense, sudden, up, down, and much more.

p. 61

Time and again, and as the experiential work progressed, I noticed an ‘automatic’ synchronisation among the research participants, evident (with)in their body shaping, effort qualities, sound or vocalisation and spatial positioning. Research participants’ discussions of this phenomenon resulted in three subthemes linked to the concept of Kinetic Attunement: ‘embodied resonance’, ‘polarities and integration’ and ‘affect in effort’.

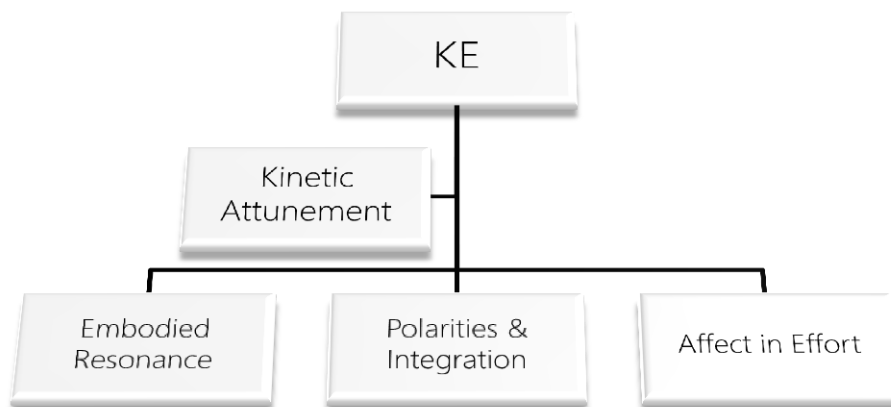


Figure 15: Kinetic Attunement subthemes

5.1.1.1 Embodied Resonance

The thematic development of ‘embodied resonance’ as a component of Kinetic Attunement is elucidated in the three excerpts below deriving from the Studio Lab group. In the first example a research participant describes, what she terms as, ‘the connections and pulsations’ manifesting in her relational embodied experience. In the second example another participant relates the notion of ‘embodied resonance’ to a process of “*listening with the*

body”. Siegel explains that this cross-modal resonance “operates in all sensory channels, not just vision – so that a sound, a touch, a smell, can cue us to the internal state and intentions of another” (2010, p. 61).

Connections and pulsations

...even when we were in our own, you know, relating to self before we started relating to each other, I found myself moving and I would look up and find someone doing something really similar ... and the further we got along into it the more I noticed that was sort of unfolding ...quicker? Yeah...and I was sort of intrigued by this connection and the playfulness and the rhythm of it all ...the pulsations.

Studio Lab participant (Workshop 1)

Here the mover recognises echoes of her embodied experience in her spontaneous rhythmic ‘connections and pulsations’ with other movers in the space. Rhythm is an inherent component of human movement and “an integral element of dance if not its defining feature” (Sheets-Johnstone, 2009, p. 320). Developmental theorists (Stern, 1984; Trevarthen, 2013) have extensively investigated the non-verbal communications embedded within parent-infant protoconversations. Trevarthen (2013) describes this innate human capacity for intersubjective creativity as a ‘narrative and musicality shared in movement’. He further suggests that through this ‘synrhythmic regulation’ psychological communication, that is the intersubjective communication of psychological states, also becomes possible (Trevarthen, 2013). In the example above, the co-researcher is “intrigued by this connection and the playfulness”. Indeed, Trevarthen (2013) suggests that play develops as an extension of the early non-verbal protoconversations through the sharing of action games and songs. Sheets-Johnstone (2009) locates play within “an evolutionary dimension of animate life” (p. 321) and describes it as “a kinetic happening in which the sheer exuberance of movement dominates and in which a certain freedom of movement obtains” (p. 322). In the second extract below the playfulness of “attuning to the sound” (in relationship) is explored as an inroad to “the different nuances of listening and quality of that relationship”.

Listening with the body

There was a sense of attuning with the sound, it was a pleasure to be able to use the sound which also created space and shape so it was really interesting playing with that. So there is a listening with the body in the moving relationship, but there is also the listening to and attuning to the sound of and with movement as well, which brings the different nuances of listening and quality of that relationship.

The above extracts suggest that ‘embodied resonance’ encompasses multisensory kinaesthetic experiences manifesting with(in) relational (movement) communication. Here I intentionally equate movement to communication to denote that at the heart of all movement lies communication and all (embodied) communication moves. The arts psychotherapies (dance, music, art and drama) have explicated a link between innate developmental embodied processes and play mediated through creative process, as key elements towards perspective taking and growth within the therapeutic process (Jones, 2005).

Two further points worth noting, in relation to the above extracts, are concerned with the clinical implications towards kinaesthetic empathic experiences. Firstly, I am curious about the research participant’s conceptualisation of being “*in our own...relating to self before we started relating to each other*”. I am reminded here of Allegranti’s notion that “our bodies are constituted in relationship through movement” (2015, p. 117). Even when we are not consciously aware of our relational exchanges, our bodies are shaped and re-shaped in relationship, this includes our autobiographical body: “a knowing historical subject constructed within a network of others” (Allegranti, 2015, p. 117). Therefore, it may be argued, that even in clients with atypical interpersonal skills, as is the case for those with autistic spectrum disorders or schizophrenia, fostering relational kinaesthetic communication becomes possible through the shared movement exchange within the intersubjective space (Samaritter & Payne, 2013, p. 146). Secondly, it may be argued that ‘embodied resonance’ influences and shapes the entire clinical system (Gallagher & Payne, 2014) including clients and clinicians’ kinaesthetic relational experiences, verbal/non-verbal communications and their imprints on the therapeutic environment. As a clinician practicing in different settings, and with different client populations, I am very conscious of the ‘residue’ each clinical context leaves in my body. Within the acute psychiatric ward my movement becomes alert, bound, vertical and contained. Within the Mother and Baby Unit I become aware of the ground, my pace is slower and my movement feels softer and rounder. And in the community setting, an open, free-flowing spontaneity becomes a prominent feature in my experience. The different subjective experiences I describe here are my own embodied resonance narratives constructed with(in) my relational kinetic attunement in these environments. This co-construction between embodied experience and the environment is further unpacked later

in the context of *affective experience* (5.1.1.3 Affect in Effort pp. 92-97) and in relation to the Socio-political Dynamics (5.1.4. pp. 113-124) of kinaesthetic empathy.

A further constituent of ‘embodied resonance’, within co-researchers’ understandings of kinaesthetic empathy, involved the experience of breathing. From my witnessing position during the Embodied Practice workshops I was struck by the importance breathing played within relational shaping, as the extract below demonstrates:

Breathe: Come on you can do it

I found all of the efforts so linked to breath, so unbelievably linked to breath, and when I was in bound... I really kind of felt that I was embodying many clients and patients that I worked with, feeling really trapped. And when I've been the therapist trying to model what it's like to be a bit free and breathe and 'come on, you can do it' you know...I really felt when I was bound I was kind of reaching out 'help me, help me get out of this thing' and when I was doing that and you were bound, I felt like what with patients many times really willing the person to be able to just drop the shoulders a bit or just open up a bit and knowing that it's so so so hard for them.

Studio Lab participant (Workshop 1)

Allegranti (2011) offers an example of a breathing ‘ritual’ constructed relationally during her therapeutic process with a client:

Together we found a rhythm, a slow but steady, at times audible, pulsating breath that began to enliven not only Persephone’s heartbeat and circulatory system but also vivified our being together in the room, our relationship with each other. Breathing together became an embodied ritual where I realised that Persephone was becoming more visible, to herself and to me.

p. 118

Breath is implicated in all movement and offers a gauge of our embodied interactions (with)in the world. Should one find themselves in a ‘fight or flight’, or else known as the stress response situation (Siegel, 2010), they are bound to experience a change in their breath intake. Intense cardio-vascular activity will rapidly increase one’s heart rate, thus breathing will become quick and shallow. And whilst preparing for sleep breath becomes deep and slowed-down. As well as alerting us to our embodied states, breath offers a regulatory mechanism. Eastern mindfulness practices, brought over to the West by Buddhist practitioners, use breath as a focusing tool for interoception and self-awareness (Siegel, 2010). Moreover, both Allegranti’s example and the research participant extract above illustrate breath’s involvement within intersubjective relating. For the research participant, breath provided another layer of embodied resonance during her kinetic attunement with other movers. And Allegranti’s example suggests that attending to kinaesthetic

manifestations of breath within the clinical relationship provides a useful intervention towards establishing a therapeutic alliance. The relational implications of breath in kinaesthetic empathy are also observed in the experience of watching/witnessing the movement of another, including dance performance. Gray's (2012) performance research describes the audience/performer 'meeting' as "a settling down [...] often manifested in a synchronicity of breathing between performer and spectator" (p. 210). The kinaesthetic experiences in the performer-audience relationship will be further unpacked in Chapter 7: Kinaesthetic Stories (pp.174-192) with reference to the research performance |mu| (Rova, 2014) derived from *Fieldwork Stage 2*.

5.1.1.2 Polarities & Integration

The concept of 'polarities and integration', as a component of the thematic development of Kinetic Attunement, emerged as part of the exploration of the LMA Effort qualities (during the Embodied Practice workshops). Even though initially the focus groups considered the experience of polarities within the context of movement improvisation, their discussion extended to include a person's broader lived experience and well-being. The two excerpts below illustrate NHS clinicians' reflections of empathically relating to patients' polarized presentations within the clinical context.

Extremes of the spectrum

So even though I related to one [polarity] more than the other ... it wouldn't have felt sustainable for much longer than we were doing it. And that made me think, you know, that they [the polarities] are quite extremes of the spectrum and if you were kind of in one or the other you would feel quite trapped or stuck or uncomfortable.

NHS Lab participant (Workshop 1)

How do you meet the person (when they are 'stuck')?

I was just thinking of how to, when people are stuck in maybe one way sort of being or relating, how do you approach, how do you meet the person and how do you maybe help to kind of move away from that perhaps to something else and how you sort of use the different sort of ways. Do you then need somebody of the same quality to some degree or the opposite you know, that sort of flow that comes you know in the dialogue.

NHS Lab Participant (Workshop 1)

To unpack the thematic development of ‘polarities and integration’ I draw on Siegel’s model of Interpersonal Neurobiology (2010) which views integration as “the linkage of differentiated elements of a system” (p 64). Referring to his psychotherapy practice Siegel characterises his clients’ experiences of distress as either ‘rigidity or chaos (or both)’: “Individuals might be stuck in depression or paralysed by fear. They’d find themselves swept into manic rages or flooded with traumatic memories. Sometimes they’d fluctuate between these extremes, stuck in a whirlwind of energy and information, terrified by minds out of control” (Siegel, 2010, p. 67). Notably, there is a recurrent appearance of the terms ‘extremes’, and ‘stuck’, both within the research participants’ quotes and Siegel’s conceptualisation. Similarly, LMA categorises (movement) effort in four bipolar qualities: Time (sudden/sustained), Weight (light/strong), Space (indirect/direct) and Flow (free/bound). Hence, it is not difficult to imagine the ‘stuck-ness’ one would experience if they confined themselves within bound flow, sudden temporality, strong weightiness or indirect spatiality in the world. ‘Feeling stuck’ and ‘not knowing how to move (on)’ are familiar themes that emerge within my own clinical practice with different client groups. As the first research participant’s quote above suggests sustaining these extreme experiences of the spectrum will inevitably cause one to feel ‘trapped or uncomfortable’.

In relation to Siegel’s notion of ‘the integration of consciousness’ focusing attention on embodied experience is an integral and well documented premise within DMP theory and practice (Chaiklin & Wengrower, 2009; Allegranti, 2015, Meekums, 2012; Payne, 2006). It supports clients to acknowledge ‘how they are’ “rather than being constrained by expectations of how “they should be”” (Siegel, 2010, p. 71). Embodied attention further promotes self-awareness and self-regulation (Chaiklin & Wengrower, 2009). The non-verbal (creative process) and verbal (linguaging experience) incorporation (Allegranti, 2015; Panhofer & Payne, 2011) of lived experience is a cornerstone in the theory and practice of DMP. As is the case for all arts psychotherapies, dance movement psychotherapy combines creative (artistic) process with verbal expression/ linguistic articulation (including reflective writing) to support a relational meaning making process of the person’s lived experience in the ‘here and now’.

Considering the implicit and explicit mental models Siegel relates towards ‘memory integration’, these are specifically processed through the person’s innate and overt embodied experiences manifested through relational movement in DMP. Sheets-Johnstone (2011)

identifies our “real-time existence of our aliveness [within the] synergies of meaningful movement that abound in our everyday lives and the kinaesthetic memory that sustains them” (p. 521). And Meekums (2012) explains that “(t)he DMP process allows for...memories to become available for conscious reflection and potential verbalisation, leading to greater understanding and often new (co-constructed) insights” (p. 55). Narrative integration (Siegel 2010) may be achieved through the cultivation of a continuous non-verbal/verbal embodied narrative. This embodied narrative is also described as the movement metaphor in DMP: “noticing how the movement feels in one’s own body, and recalling this within a bank of prior and complex experience, symbolically encoded” (Meekums, 2012, p. 54). The collaborative and reciprocal nature of the therapeutic process as applied in DMP (Allegranti, 2015) facilitates what Siegel (2010) describes as ‘interpersonal integration’, also termed as the ‘we-centric space’ (Gallese, 2009). In DMP the construction of relational understandings emerges through an embodied and creative engagement with the unknown as captured in Shreeves’ (2006) description of the creative process below:

Our dancing can be a journey of adventure. Along the way we may feel anxiety or fear, where nothing is clear. We have left behind the safety of what we know and are stepping over the edge of darkness into the unknown. On this route we need to trust our creative process.

p. 240

By exploring the continuum between the verbal and non-verbal processes involved in the use of ‘polarities and integration’ in dance movement psychotherapy, this section has aimed to reveal an additional layer of Kinetic Attunement implicated within clinicians’ potential understandings of kinaesthetic empathy.

5.1.1.3 Affect in effort

A third subtheme within the Kinetic Attunement category of kinaesthetic empathy involves the interrelationship between affect and (kinetic) effort as the excerpts below demonstrate. In the first two examples research participants discuss their affective responses to certain movement qualities explored experientially.

[Different] movement can make you feel different

I found when it came to the weight between the strong and the light, that I found the strong one was, it felt, much more attacking; it felt like it was quite a tough movement, it felt quite assertive. And in particular when I was doing the pair work it kind of made me want to back away and made me want to become more introverted or more like to kind of counteract that.

And I guess particularly with some of our work if we have some people who, you know, can present in that way it can feel quite attacking. And maybe they don't realise they are presenting in that way, but I guess part of the communication is, kind of their movements can make you feel different.

NHS Lab participant (Workshop 1)

Free flow was very easy... bound flow felt like (being) trapped

The free flow for me was very easy, light it felt comfortable and felt relaxing and you know it just it was good. I enjoyed that very much. The bound flow felt like (being) trapped, difficulty with breathing and I just wanted to be freed, struggling. Like wanting to get out but I can't.

NHS Lab participant (Workshop 1)

Dance philosopher Sheets-Johnstone (2009) asserts that “the *expression* [author’s emphasis] of emotion in man and animals is a kinetic phenomenon, a neuromuscular dynamic that...has a certain spatiality, temporality, intensity, and manner of execution” (p. 199). She goes on to suggest that “(i)n Labananalysis and Labanotation especially, both the *what* and the *how* [author’s emphasis] of movement is notated...In effect, one could specify both the qualitative dynamics of movement and the formal dynamics of emotion as they are simultaneously played out” (p. 213). Interestingly, the participant excerpts discussed in this section relate to movers’ experiences of Effort during their experimentation with LMA, a tool used extensively both pedagogically and clinically in DMP (Allegranti, 2015; Loman et al, 2009). Sheets-Johnstone (2009) formulates “the global phenomenon of movement...as the fundamental dynamic congruency of emotion and motion” (p. 205) and further defines emotions as “possible kinetic forms of the tactile-kinesthetic body” (Sheets-Johnstone, 2009, p. 205). Notably, participants’ responses to the LMA effort qualities concentrated specifically on how different movement experiences made them *feel*, rather than on the emotions they experienced whilst moving. The first participant explains that “*when it came to the weight between the strong and the light...the strong one ... ‘felt’ much more attacking*”. The *felt* experience of movement is echoed in the second participant excerpt: “*The free flow for me was very easy, light it ‘felt’ comfortable and ‘felt’ relaxing... The bound flow ‘felt’ like (being) trapped*”.

In their research of ‘Affective Responses to Everyday Actions’ Hays and Tipper (2012) “use the terms ‘affect, ‘feeling’ and ‘emotion’ interchangeably to mean positive and

negative emotions that relate to preferences” (p. 69). They go on to explain that “(m)otor processes are seen to play a role in the emotional *response* [authors’ emphasis] to the perceptual and cognitive appraisals. For example, a frightening stimulus might evoke an emotive facial expression and a reflexive withdrawal movement” (Hays & Tipper, 2012, pp. 69-70). Arguably, the terms ‘emotional response’ and ‘affective experience’ point to different perspectives and phenomena when unpacking embodied intersubjective experience is concerned. ‘Emotional response’ can be understood as a cognitive construct relating to the *output* of experience communicated intersubjectively. Emotions are categorised and defined to imply specific things (i.e. happy, sad, angry and afraid). On the other hand, it could be argued that ‘affective experience’ encompasses a phenomenological dimension where the act of living is made sense of experientially. In this respect a feeling may not always fit with the predetermined set of concepts used to describe emotions. I agree with Reynolds’ (2012) conceptualisation of the ‘affective turn’ “in the arts and humanities [as an] alternative approach to empathy in which it can be decoupled from models of emotional communication or relations of identification between autonomous subjects” (p. 126). She goes on to explain:

To be ‘affected’ is to be moved in an embodied sense, rather than in the more cognitive sense, which may be implied by emotional response...(A)ffective responses are not voluntary: they seek us out. Such affective embodied states cannot be categorised in terms of emotion, and are not tied to cognitive judgements, although they may trigger them. Also they are embedded in the contexts and histories of personal and cultural uses of the body.

Reynolds, 2012, p.126

As a bilingual speaker I am acutely aware of the linguistic limitations embedded in different languages. Often certain words, states or feelings may not translate directly to another language, however tangible and embodied given affective experiences may be. Through my personal linguistic practices interweaving Greek (mother tongue/private language) and English (academic /professional language), I have come to realise that my affective experiences are best expressed in Greek, whereas a more cognitive (analytical) unpacking of the same experiences may be better articulated in English (Anooshian & Hertel, 2008). Albeit a subjective view, this example points to the clinical implications of language with patients for whom English is a foreign language. With the global movement of populations across borders and countries (linguistic) identity becomes malleable, for example in articulating affective experiences within foreign or unfamiliar cultural contexts.

Another point to consider is the multiple ways different cultures and languages use to represent and/or articulate human emotion and experience. For instance, the word ‘emotion’ derives from the Latin ‘emovere’ [e(x) + movere] literally meaning outward movement. In Greek the etymology of emotion, ‘συγκίνηση’ [sy(n) + kinisi], literally means ‘moving with’, that is the experience of moving (with) someone or being moved by someone/something. Note the words ‘movere’ and ‘kinisi’, movement, as a mutual root for the word emotion, but the difference in the prefixes ‘e(x)’ (outwards) and ‘sy(n)’ (with). It is not only important to attend to entrenched linguistic and cultural meanings of embodied experience, but as Allegranti (2015) points out there is a “need to pay close attention to how our bodies are shaped by language and how in turn, our bodies can influence language” (p.16). She goes on to suggest that “(j)ust as the use of language is context-dependent, our embodied discourses are also variable” (Allegranti, 2015, p.16). To this I would add, that this multiplicity of meaning making and articulating lived experience is not only relevant to (the presence of) language as a cultural/dialectal phenomenon. It is also pertinent, clinically, for those patients whose (verbal) language is absent due to trauma, impairment (i.e. dementia, brain injury or deaf-mute patients) or deep psychological pain.

I recently worked with a young woman, who I will call Rosemary. Alongside her mother tongue Rosemary spoke fluent English having lived in the United Kingdom for many years. Rosemary was admitted to a female acute mental health ward with a diagnosis of bipolar disorder (manic depression). During acute relapses, within her admission to the hospital, the patient presented with elective mutism. During my repeated attempts to engage her in the therapeutic process, Rosemary responded by trembling and wrapping her hand around her throat she would open her mouth as if starting to formulate a word, but no sound would come out. Often tears would stream down her face. Shaking her head from side to side Rosemary would ‘tell’ me ‘I have no words’, however her body shaping, her breath, her rhythm spoke volumes. We communicated through a shared dance, a non-verbal exchange, affectively attuning to each other’s movements, gestures and facial expressions. In DMP affect attunement (Loman et al, 2009) is explored through the shared movement experience (Meekums, 2012) as “a key manifestation of empathy between individuals” (Loman et al, 2009, p. 248). Sometimes I would verbalise my affective witnessing responses: “I feel the weight of the cloth in your hands”, Rosemary would respond by nodding or by adjusting her engagement with the prop. I would also offer movement invitations as metaphors (Meekums, 2012) to support her to find agency in her embodied (and psychological) process: “I wonder

if your body needs to let go of the cloth or whether you would like support to carry it through the space?” Again Rosemary would respond non-verbally and sometimes even whisper words such as ‘yes’ and ‘thank you’. Not only did our kinaesthetic meeting let Rosemary know that I could see and be with her, it also made her visible to herself (Allegranti, 2015). Therefore, I suggest that attending to the shared kinaesthetic experience within clinical contexts, is a useful intervention towards overcoming linguistic barriers in the communication of affect and emotion.

The third excerpt in this section relates to a research participant’s reflection on the shared affective response evident in the intersubjective space during the first Embodied Practice workshop as part of the NHS Lab group.

It felt like a pressure cooker in here

It felt like a pressure cooker in here...you could feel the heat rise and sometimes you will get that air on the ward that something is not right ... and the pressure is building and there is real tension...

NHS Lab participant (Workshop 1)

Here the research participant draws attention to the simultaneous influence of the person’s affective experiences to the environment and vice versa. Gibson (1979) developed the concept of ‘affordances’ as part of his ecological psychology theory, considering physical, psychical and environmental factors as integral co-influencing agents in the shaping of human behaviour.

Earlier, I identified an environmental residue in my body when I discussed my experience of working within different clinical settings (5.1.1.1 Embodied Resonance pp. 86-90). According to Gibson’s theorisation, my varied experiences (within the multiple clinical settings) are a manifestation of the environmental and psychological affordances embedded (and embodied) in my interaction with them. Gallagher and Payne (2014) build on Gibson’s notion of ‘affordances’ in their account of ‘the role of embodiment and intersubjectivity in clinical reasoning’. This link between environmental affordances and lived experience will be further elaborated on under the fourth thematic category of kinaesthetic empathy in this investigation, namely Socio-Political Dynamics (5.1.4.4 Environment pp. 123-124).

In this section, Kinetic Attunement was discussed as a constituent theme of kinaesthetic empathy as mediated by the research participants' *embodied resonance*, *polarities and integration* and *affective responses* within their clinical context. Interestingly, even though these phenomena of kinaesthetic empathy were present (experientially) in both research groups, they were prioritised differently within the Focus Groups discussions. For example, 'embodied resonance' was more readily articulated as a concept by Studio Lab participants. It may be argued that Studio Lab participants were more versed in discussing themes of 'embodied resonance' due to their specialist training in embodied practice. On the other hand NHS Lab participants appeared more tuned to the affective layers of 'kinetic attunement' as a more prevalent theme within their clinical experience.

5.1.2 Familiarity

The second theme of kinaesthetic empathy investigated within the Embodied Practice focus groups involved the concept of Familiarity. Research participants considered familiarity as a mediator of empathic relating and as an essential component in their therapeutic relationship with clients.

I don't know you and yet here we are in this dialogue

I don't know some of you and yet here we are in this dialogue... how do I do this you know...Do you feel seen? Am I being seen? And then that sense of real familiarity with [P1] who I do know... Yeah I know your language, I know how you talk, I know how you move, it's like really very comfortable, very familiar. And then the three of us came...and it was 'oh right so now it's kind of this three of us...is that dialogue going to remain the same, is it going to change is it...' you know, really interesting reflection and just sort of brought to mind of how when we go to our clients we don't know them, where (do) you start from ...

Studio Lab participant (Workshop 1)

In their research project *Watching Dance: Kinesthetic Empathy*, Jola, Ehrenberg and Reynolds (2011) included the theme of 'familiarity' in their qualitative interviewing, as an anticipated agent of empathic response in the experience of watching dance. For them 'familiarity' related to the audience members' knowledge and understanding of given dance styles. Research participants' perceived emotional and embodied responses were measured both qualitatively and experimentally in relation to familiar and non-familiar dance styles. Interestingly, in their findings Jola et al. (2011) emphasise that "it was not only what the

participants had seen of a given dance style (their level of viewing experience), but also their preconceived/culturally received ideas about it and their personal preferences or motivations which affected how they experienced it” (p. 31). In the excerpt above the research participant grapples with the role familiarity plays in her relational experience with another mover: *“that sense of real familiarity with [P1] who I do know... it’s like really very comfortable, very familiar”*. Her description of the verbal/non-verbal language (culture) she recognises in the other person, *“I know how you talk, I know how you move”*, points to her anticipation and motivation to engage in this relationship. In this sense, familiarity enables her openness within her intersubjective positioning with the other mover. On the other hand the participant’s unfamiliarity with other movers created a different discourse: *“I don’t know some of you and yet here we are in this dialogue... how do I do this you know...Do you feel seen, am I being seen?”* The participant’s unfamiliarity of the new relationship caused her to question the level of recognition possible in this new dialogue (*“do you feel seen, am I being seen?”*). The research participant’s further curiosity about how new clinical relationships are built based on the context of (un)familiarity points to the two subthemes developed in the focus group discourse. ‘Time’ and ‘trust’ were conceptualised as prerequisites for building familiarity in the moving relationship and by extension in the clinical relationship as the following two sections demonstrate.

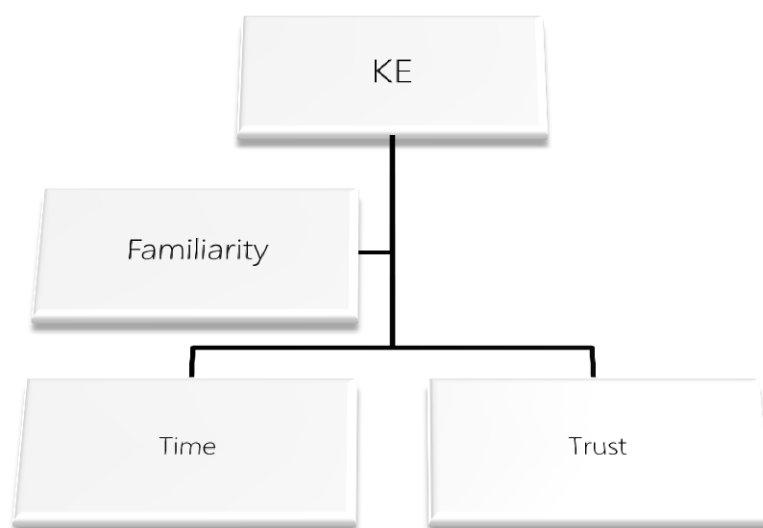


Figure 16: Familiarity subthemes

5.1.2.1 Time

In the extract below a research participant suggests that time builds familiarity thus enhancing the person's ability to empathically relate to another.

It takes a little bit of time

I think it was a useful period of time because gradually you get to understand that person's movements and actually some of them were quite repetitive so you might guess that someone might move their left hand first and then naturally that person is going to then move their right hand so you kind of after a while picked on their responses...and I guess that's like the relationships we have with our clients. It will always take a little bit of time to get to know them, but after a while you can kind of get a better sense of them as people.

NHS Lab participant (Workshop 2)

In his literature review of the 'acquaintanceship effect' investigated in recent studies, Ickes (2011) explains: "the friends' empathic advantage was due to their greater pre-existing store of mutually shared knowledge, rather than to greater similarity in the friends' personalities or to the greater level of interactional involvement they displayed" (p.64). This 'mutually shared knowledge' Ickes (2011) refers to echoes the research participant's view that time allowed her to "*gradually...understand that person's movements*" as well as to anticipate what was coming next: "*some of them were quite repetitive so you might guess that someone might move their left hand first and then naturally that person is going to then move their right hand so you kind of after a while picked on their responses*". However, it seems that the historical, shared and embodied knowledge we hold in relation to another, in which apparently time plays a key role, is only part of the story. According to Ickes (2011) other studies suggest that "a significant "acquaintanceship effect" could develop fairly quickly in a situation in which the target persons are willing to disclose at a high level" (p. 64). Based on this claim then, it could be suggested that as the therapeutic relationship involves a high level of disclosure on behalf of the patient (be it for physical or mental health issues), familiarity may be enhanced based on the intensity and/or detail of the material shared. The clinician becomes familiar with the client's story hence her empathic response, to the emerging need and relational phenomena manifesting within the therapeutic contact, becomes possible. However, the power imbalance between the clinician, who has access to the client's personal material and history, and the patient who relates to the clinician's professional identity, potentially may hinder the cultivation of familiarity. This imbalance becomes more

prominent in the context of clinical governance (NHS) and patient record keeping. For instance, a therapist may have access to a client's personal material (through family history and risk assessment records for instance) when the patient may have chosen not to disclose this information to the therapist themselves. The socio-political dynamics embedded within the therapeutic relationship, manifesting through kinaesthetic empathy, will be further unpacked in section 5.1.4 (pp. 113-124).

Returning to the interrelationship between familiarity and disclosure within the therapeutic process, Shreeves (2006) explains “(i)n DM(P) the basic tenet is that everyone can move and dance and their movement will be meaningful on a personal level. The therapist provides a safe space for disclosure of the feelings and thoughts which arise from the symbolic nature of the dance experience” (p. 235). I suggest that, as the qualitative evidence in this study has shown so far, the shared, embodied and affective experiences mediated by kinaesthetic empathy in DMP, can offer a bridge between verbal/non-verbal communication and further enhance the therapeutic alliance. Furthermore, time allows for the development of familiarity and intimacy within the therapeutic relationship, which further cultivates a culture of trust within the clinical exchange as further illustrated in the extracts below.

5.1.2.2 Trust

In the first excerpt a research participant reflects on her movement experience with another mover and questions whether the feeling of ‘trust’ she experienced was because of their established relationship or due to the mirroring process they were engaged in.

Trusting that you will be with me

... so I was just mindful that I have you know, a relationship with P4 and that it felt like, I was wondering whether it was because it was comfortable relationship that I so easily felt comfortable in that movement when I was mirroring her movement, I felt very there with her... I felt very natural and then on the other side, on being mirrored, I felt so safe and trusted, being seen feeling totally trusted that ‘you will be with me’, is what I wrote, with no sort of questions like again it felt really comfortable and just (sighs) and I wondered is that the relationship? Or is that the mirroring? I suppose that’s the question, curiosity I’m left with.

Studio Lab participant (Workshop 2)

First, the participant identifies her established relationship with the other mover as a mediator for her feeling “*comfortable*” and “*very there with her*” in the exchange. This would be consistent with the notion discussed above that time builds familiarity and therefore trust in the relational process. The research participant also identifies the use of mirroring as a possible mediator in her experience of trust. Through their analysis of the Kestenberg Movement Profile, a developmental movement analysis tool used widely in DMP, Loman et al (2009) explain:

Trust develops, alongside mirroring and identification, from patterns of mutual relatedness identifiable in shape-flow rhythms. Similarly, the therapy process proceeds differently via “readjustments of relatedness” or interpretation depending on whether the patient is benefiting from identificatory/mirroring experiences or those that serve differentiation. Trust involves predictability in the domains of comfort-discomfort and approach-withdrawal regulation.

p. 249

The research participant reflects that “*on being mirrored, I felt so safe and trusted, being seen feeling...that you will be with me...it felt really comfortable*”. The relationship between comfortability/approach and trust was consistently evident in participants’ experiential responses as the next two excerpts illustrate:

We both wanted reassurance

I couldn’t get eye contact to see if I was doing the right thing or not...even if it was a disapproving look... But I felt you wanted reassurance one way or the other ‘am I leading well, am I doing what I should be doing’. We both wanted reassurance...

NHS Lab participant (Workshop 2)

Here the research participant is seeking “*eye contact to see if (he) was doing the right thing or not*”. Eye contact is a very early and regulatory source of information as Gerhardt (2004) highlights:

Certainly attentiveness to faces is hard-wired into human beings and is evident even in newborns. By toddlerhood, the human child has started to use his mother’s and father’s faces as his immediate guides to behaviour in his particular environment. Is it safe to crawl out of this door? Does Dad like this visitor? This is known as ‘social referencing’, with the infant using visual communication at a distance to check out what to do and what not to do, what to feel and not to feel...

p. 41

Shared non-verbal kinaesthetic exchanges promote affiliation and trust as shown by Rabinowitch, Cross and Burnard (2012) in their model of Musical Group Interaction. The authors suggest that “unlike language, music does not require mutual recognition of explicit reference by the interacting participants; rather it possesses a property of semantic indeterminacy” (p. 115). They further outline how the open-ended nature of the creative process, true for all the arts psychotherapies, creates a new social context:

(M)usic may provide a social context in which, even if participants hold different interpretations of the collective experience...the open-endedness of musical expression does not foreground this. Each participant’s individual sense that they are experiencing the meaning of music ‘naturally’ encourages the perception that the experiences of other participants must be in alignment with their own.

Rabinowitch et al, 2012, p. 115

To the statement above, I would add that the embodied relational exchanges fostered within the dance movement psychotherapy process further reveal “(t)he degrees of intimacy of our lived relationships (as) mirrored in our bodies and in our movement patterns” (Allegranti, 2015, p.117). Therefore, alongside the ‘natural’ relational sharing (Rabinowitch et al, 2012) afforded to us via non-verbal creative processes, attending to “experiences that are constituted around subjectivities, emotions, intimacy and the body” (Allegranti, 2015, p.22) is equally important towards establishing a safe holding environment (Loman et al, 2009). The final excerpt in this section is by a participant who, during a touch experiential, identified ‘holding’ as being fundamental in her understanding and experience of trust.

When I don’t feel that the other person can hold me

...sometimes when I don’t feel that the other person can actually hold me or take care of me, then I have to take care of myself and then I won’t be that honest, I think with it (the movement dialogue). I will be careful.

Studio Lab participant (Workshop 3)

The holding or potential space (Winnicott 1971) has been greatly researched in relation to intersubjective and child development as Rochat et al (2009) explain:

By two months infants already appear to transcend basic mirroring processes by manifesting first signs of reciprocity in face-to face exchanges (primary intersubjectivity). They soon engage in triadic intentional communication with others about objects (secondary intersubjectivity, starting approximately 9 months) and eventually begin to negotiate with others about the values of things, including the self

as shared representations (tertiary intersubjectivity, starting approximately 20 months).

p. 4

Therefore, the social construction of meanings (such as shared values and building trust) are fundamentally possible because of these early reciprocal intersubjective exchanges (Rochat et al 2009). In other words, our understanding of and experiences in the world are constructed on the basis of our embodied interactive practices (Gallagher, 2005) and in the research participant's words: "*when I don't feel that the other person can actually hold me or take care of me, then I have to take care of myself*". As Loman et al (2009) suggest "holding another without being held oneself is not conducive to healthy development" (p. 249). This raises important questions about how we can foster a safe environment in the clinical context, where both clinicians and clients feel 'held' so that "trust can be created and maintained" (Loman et al 2009, p. 249). This section has discussed the role of Familiarity in the fostering of kinaesthetic empathy within clinical contexts, next I turn to intersubjectivity as a component of kinaesthetic empathy.

5.1.3 Intersubjectivity

Intersubjectivity forms the third thematic component of Kinaesthetic Empathy in this study. This concept yielded four subthemes namely: 'subjectivity', 'co-creation', 'similarities and differences' and 'dialogic process'.

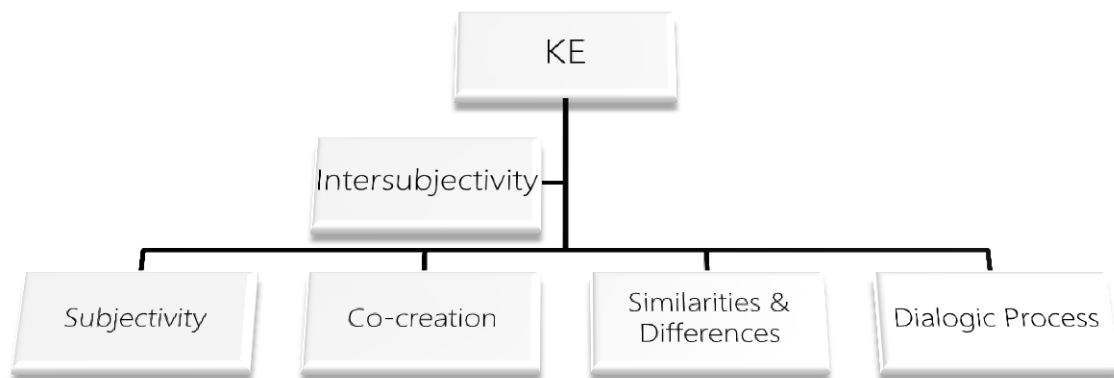


Figure 17: Intersubjectivity subthemes

5.1.3.1 Subjectivity

In the following excerpt a research participant reflects on ‘subjectivity’ as the ground for her lived experience. Her response came after an improvised movement exploration with another mover, which included mirroring.

I couldn’t see me in you; I could see you being in the same state.

I would never be able to see myself in someone else... even if this person looks exactly like me it’s a different body, shape and it’s a different face, it’s a different way of looking and expressing the same thing... even if you manage to get...everything the same from the other person and the feeling and the posture and everything it would never be the same because it’s not the same body. I was thinking more about what this thing that I did, this position that I took in a second what kind of...imagery or emotions [evokes in me]. And then when you did it (P4) I had exactly the same...it was kind of reinforcing my thoughts about what I did and I could see that...I couldn’t see me in you, I could see you being in the same state.

Studio Lab participant (Workshop 2)

Here it may be possible to identify the paradoxical relationship between ownership and co-constitution of lived experience. The research participant emphasizes that she “*would never be able to see (her)self in someone else*” and continues that “*it would never be the same because it’s not the same body*”. The co-researcher therefore, states the ownership of her

lived experience, or to borrow Sheets-Johnstone's (2009) notion her 'first person body', evident in "*this position that I took... (the) imagery or emotions*". This example speaks to Reynolds' (2012) assertion that "subjectivity is embodied and...this embodiment grounds our experience of the world and each other" (p.87). In this sense, we can never fully 'know' another person's lived experience 'from the inside'. However, as Allegranti (2013) points out "(t)he question of 'ownership of one's body' shores up a dialectical notion: Embodied intersubjectivity and that ownership necessarily implicates issues of power relations in society and, by default, within psychotherapeutic practice as a social system" (p. 401). She goes on to explain:

During clinical movement improvisation (and in the choreographic process), I could say that my movement "is and is not mine" since I actively work with this personal-social tension and encourage a constant shift of intercorporeal attention, between my movement and linguistic meaning making and that of the other(s). In this way, there is an ongoing (never ending) reconfiguration of boundaries between myself and another that emerges from a material process of being in relationship and exchanging movement phrasing over time.

Allegranti, 2013, p 401

Despite her reluctance to *see* herself on the other, the research participant recognised that the shared movement experience "*reinforce(d) (her) thoughts about what (she) did*", what Allegranti (2013) would call intra-activity: "how we can dynamically shift between me and not me and how we are both within and part of the world in our improvised becomings" (p. 401). I am reminded here, of working with clients who struggle to 'own' their intersubjective potentiality and how a shift from the personal to the relational perspective forms the basis of psychotherapeutic (ex)change (Knox 2014). As Fischman (2009) suggests: "Today, a therapeutic relationship is considered the encounter of subjectivities, two perspectives meeting for the goal of comprehending one" (p. 34). In DMP this therapeutic encounter is achieved through an actual (embodied) 'inter-subject-activity', which further relates to the next subtheme, of 'co-creation', emerging through the Embodied Practice focus groups.

5.1.3.2 Co-creation

In the excerpts following below, three research participants discuss their experiences of intersubjective movement improvisation in the context of 'co-creation'. The first example is from a Studio Lab participant who locates co-creation in the "*space in between*".

The space in between is a space of co-creation

I felt when we were working together, a reflection of the space in between was, you know the first thing of engaging... and getting a felt sense of where you were at, not knowing quite what to do with that and then just sort of recognising that the space in between is a space of co-creation, if you just allow it, you know if you just breathe, if you just breathe and allow what needs to emerge to emerge.

Studio Lab participant (Workshop 1)

I am interested in the participant's notion of "*allow(ing) what needs to emerge to emerge*" and her notion of 'in-between-ness'. Drawing from her research into kinaesthetic empathy with health professionals and educators Fischman (2009) explains: "(N)ot everyone empathizes with everybody. It is the inter-subjective matching that makes a therapeutic relationship work...The empathetic possibility is relational and selective" (p. 45). In the quote above, I recognise the research participant's background in dance movement psychotherapy as she reflects that "*the first thing of engaging*" with the other was about "*getting a felt sense of where (they) were at (and) not knowing quite what to do with that*". As Nolan (2014) suggests "with a body-mind perspective, the therapist commits to sense as well as analyse, enabling an attention to the intersubjective experience as a strong therapeutic relationship to build" (p.31). He further unpacks this co-creational process as follows:

As therapists notice their own feelings, thoughts, images, sense of expansion, internal flows and sensations, they implicitly invite clients to do likewise. This sensing enlivens the mutual, reciprocal moment-to-moment experience in a more vital and alive way.

Nolan, 2014, p. 31

This reciprocal moment-to-moment experience described by Nolan, and other theorists (Rochat et al, 2009; Trevarthen, 2013; Allegranti, 2013), is also illustrated in the following example by another research participant, who uses the metaphor of "*game*" to articulate her "*understanding*" and "*connection*" of/with another.

Making connections

I found that being able to do it with another person made it easier and that was a surprise, 'cause I wasn't expecting that to be such an easy connection ...and there were bits of game and understanding... really connection in the sense of 'oh I know what she is doing, she knows what I am doing' ... like it's sort of ...it flows.

Studio Lab participant (Workshop 1)

The co-researcher says that “*such an easy connection*” came as “*a surprise*” to her. Yet, connection is what our moving bodies are ‘designed’ for developmentally. As Tortora (2009) emphasises (imbuing Beebe and Lachmann’s work): “(t)he exchange between mother and infant unfolds during each interaction and is co-constructed at the nonverbal level involving self-regulation and interaction or co-regulation” (p. 169) or else described as “interactive regulation” (Nolan, 2014). This is evident in the research participant’s sense making process illustrated above “*oh I know what she is doing, she knows what I am doing’...it flows*”. A further layer of this recognition of another as part of the intersubjective process involves what the next research participant describes as a “*silent interpretation*”.

Silent interpretation

I saw people being quite thoughtful in their sort of gestures and their movements and also it felt like there was quite a lot of interpretation going on, sort of silent interpretation of what was meant by a push or guided movement.

NHS Lab participant (Workshop 3)

Fischman (2009) describes kinaesthetic empathy as a “form of knowledge, of contact and shared construction that may take many forms” (p. 48). This, for me, points to the notion of multiplicity (Allegranti, 2015) within our relational kinaesthetic understandings, or what Finlay (2012) might term as a ‘first-person phenomenology’, as illustrated through the research participants’ life-world accounts (Valle, 1998) throughout this chapter. A further exploration of intersubjectivity is offered in the next section through a discussion of ‘similarities and differences’ within research participants’ experiences of kinaesthetic empathy.

5.1.3.3 Similarities and Differences

The third subtheme of intersubjectivity involves ‘similarities and differences’ within relational understandings of kinaesthetic empathy. Interestingly this theme was arrived at intersubjectively, as it developed through participants’ dialogic unpacking of embodied experiences. The conceptualisation of ‘similarities and differences’ therefore, refers to (i) how lived experience was articulated and (ii) participants’ embodied perceptions of that experience. As I will demonstrate below, these ‘similarities and differences’ became noticeable during the verbal relational process. It is pertinent to ask then, whether research

participants would have picked up on this phenomenon had there been no verbal articulation of their (different) movement experiences in the focus group. Moreover, acknowledging ‘similarities and differences’, within intersubjective lived experiences, suggests the relevance of phenomenological questioning within dance movement psychotherapy (Rova, 2009). It is also worth noting that even though ‘similarities and differences’ were observed across the Embodied Practice programme, the selected excerpts following below specifically communicate the relational entanglements (Allegranti, 2014) embedded within the meaning making process. These excerpts are taken from workshop two, specifically focusing on improvised explorations of mirroring. One of the research improvisations involved an embodiment/witnessing experiential. In pairs, participants took turns to embody and ‘hold’ a shape (whole body posture or gesture) whilst their partner witnessed their embodiment. Both participants were then asked to record their responses to their individual experiences (mover/witness) through creative writing and/or drawing. Then the witness reflected the embodied shape back to the mover, before both participants recording their responses again. This research task invited the mover to embody-reflect-witness their personal position. For the witness the process was in reverse; witness-reflect-embody another’s experience. Participants had the opportunity to explore both the mover and witness positions during this experiential. The research aim here was to investigate whether, what I describe as, ‘embodied reflection’ affected participants’ meaning making process in articulating their (and understanding another’s) lived experience. In the first excerpt two NHS clinicians discuss the “*difference*” in the language they used to describe the “*same*” ‘feelings’.

We used different words to describe the same feelings

P3: So we kind of felt very similar things. It was interesting that we used different words to describe the same feelings... So one of them I think I said, I felt like, ‘calm’, ‘relaxed’ ‘contained’ and ‘grounded’ ...P4: So I used ‘balanced’, ‘thoughtful’, ‘focused’, ‘still’, ‘peaceful’ and ‘open’. P3: Quite similar words to portray the same emotion, so I guess that’s part of individual differences and how people describe things which is quite interesting to take into account with our client group.

NHS Lab participants (Workshop 2)

The two research participants recognise that even though they experienced the “*same*”, broadly speaking, positive feeling each chose a “*different*” set of words to denote this. The co-researchers also note the relevance this notion has for their therapeutic relationships with

service users. Fischman (2009) suggests that kinaesthetic empathy includes both factors (sameness and otherness) within our intersubjective exchanges:

The common factors in the intersubjective experience imply twinlike conditions, closeness, fusion, consensus, while discrepancies refer to that belonging to somebody else, difference, otherness, strangeness. Total agreement disallows subjectivity, while total discrepancy disconnects. Kinaesthetic empathy implies one and the other in varying proportions but with a positive balance favouring similarities.

p.44

In the next example, through discussion, two Studio Lab participants ‘discover’ their different perceptual lenses in their meaning making process of their ‘embodied reflection’ experiential.

Dialoguing difference

P1: ...the thing that was sticking out most was the differences in her body...I was like ‘I was not looking that way’ (laughs) ‘my back hand wasn’t that way’ (laughs)... ‘there was this twist in there that I can’t see her doing’...P2: Ok because for me when I actually went to do your position I was like ‘Oh where was she?’ So what I was holding was the feeling that... it had. Ppff! Left foot, right I don’t know something like this but it was the FEELING (emphasised) that I was embodying. P1: I even wrote ‘I don’t know if my impression is what happened, but it definitely felt to me different to how it looks on her’. P2: And in an interesting way on the flipside when you then did my form or shape I was, that was like ‘aahhh yeah, it feels familiar ahh yeah yeah’ and it wasn’t about where you had your foot or what... P1: (laughs) ...which is really funny because I wrote the opposite (laughs)! I wrote ‘It looks so comfortable on her and to me it was hurting’...

Studio Lab participants (Workshop 2)

This dialogue illustrates differences in perspective, perception and experience, rooted in the relational and moving body. The first participant (P1) describes not being met by her partner: “*I was not looking that way...it definitely felt to me different to how it looks on her*”. On the other hand, rather than replicating the precise embodied shaping the second participant (P2) says that she was aiming to embody the “*FEELING*” she perceived on her partner. Even when the roles reversed participants maintained their differentiated positions: P1 feeling unable to ‘meet’ her partner (“*‘It looks so comfortable on her and to me it was hurting’*”) and P2 feeling recognised by her partner (“*‘aahhh yeah, it feels familiar ahh yeah yeah’*”). The difference in (bodily) perspective within this mirrored experience, attending to precise body placement versus a felt response to movement, does not sit outside other differentiating characteristics found in the two individuals. Participants’ cultural difference is denoted in their verbal and non-verbal practices. It is worth noting that both participants originated from overseas. Furthermore P1 is a dance artist (focusing on body’s positioning), whereas P2 is a

dance movement psychotherapist (attending to felt experience). I am interested here in the multiple layers involved in the shaping of participants' differing experiences such as cultural, professional and perceptual. Concepts of similarities and differences are situated in relationship and influenced by numerous variables including personal circumstances and background, previous experience, knowledge, individual attitude and movement practices to name a few (Fischman, 2009). As Fischman (2009) explains it is through acknowledging difference that a therapeutic exchange becomes possible. Taking the above example, this intersubjective exchange facilitated the participants' relational (verbal/nonverbal) and kinaesthetic understandings of their empathic responses towards each other. In their account of 'reflection, reflective practice and embodied reflective practice' (in relation to self-development and professional practices) Leigh and Bailey (2013) suggest that "an embodied reflective practice focuses on an increased self-awareness grounded in physical sensation ... including images, thoughts and feelings. This embodied self-awareness can increase adaptive empathy..." (p.160). In the next excerpt another research participant reflects on how individual experience transpires:

Individual experience

Just thinking about people's individual experience, anybody's really, and how things take shape in their life, it just could be so different. And it can be different in your mind whether you put thought into it or not and how that actually transpires.

NHS Lab participant (Workshop 2)

Allegranti (2015), along with other feminist theorists (Butler, 2007, 2004; Grosz, 1994), urges us to think about difference 'differently': "This is counter to dominant discourses that polarize differences (in gender, sexuality, culture, ethnicity and class)...Both difference and similarity can co-exist and the tension lies in recognising and appreciating these differences before we can move forward and see similarities" (p. 200). As already discussed recognising (and tolerating) otherness is an important concept within psychotherapeutic practice and a catalyst for human development and growth. Further elaboration of the Socio-political dynamics of kinaesthetic empathy is explored in section 5.1.4 (pp. 113-124).

5.1.3.4 Dialogic Process

The fourth and final subtheme of intersubjectivity as a component of kinaesthetic empathy in this investigation is the ‘dialogic process’. My interest in ‘dialogue’ as an embodied process relates to the Greek origin of the word (διάλογος). It literally denotes the ‘meaning within’ or ‘flow of meaning’ between two or more people. To this end, dialogic exchanges in this research project were explored both experientially (through the Embodied Practice workshops) and experimentally through EEG (see Chapter 6 pp. 139-173). Dekeyser, Elliott and Leijssen (2011) explore dialogue in the context of embodied understanding and suggest that “(e)mpathy in psychotherapy is dialogical because it is based on the empathic faculties of both the client and the therapist, activated automatically through verbal and nonverbal exchanges, and enhanced by conscious efforts by each to understand the other” (p.114). The first two examples following below illustrate the experience of a dialogic connection occurring ‘naturally’ within participants’ embodied experiences.

Nonverbal dialogue

It seemed like we clicked and it was like the nonverbal was so connected and we were able to respond, it seems like we understood each other and it was a dialogue going on here non-verbally and that was good.

NHS Lab participant (Workshop 2)

In this example, the research participant suggests that the nonverbal connection enabled a dialogic response further facilitating the understanding of one another. In other words, and based on the analysis so far offered in this chapter, it appears that participants’ kinaesthetic intersubjective experiences allowed for a relational nonverbal flow of meaning offering reassurance and recognition to both parties. Another example of this ‘natural dialogic response’ may be seen in the research participant extract below:

Naturally undulating

There wasn’t a natural leader we were just responding to each other and it was kind of quite naturally undulating and it kind of took a natural course without one leading the other more, which was quite nice. And I thought how nice it is to have someone responding to you. And it felt natural to respond to each other.

NHS Lab participant (Workshop 2)

The research participant comments: *“I thought how nice it is to have someone responding to you”*. Allegranti locates ‘response-ability’ within our capacity to “mediate between internal and external experiences” [that is] “how we organise our bodies at any given point in our lived intersubjective experiences” (Allegranti, 2015, p.199). Siegel (2010) also describes ‘response flexibility’ as central to our capacity for self-regulation and effective social interaction: “This ability to pause before responding is an important part of emotional and social intelligence. It enables us to become fully aware of what is happening – and to restrain our impulses long enough to consider various options for response” (p. 27-28). This *naturally undulating* relational ability to respond, described in the above participant quote, contrasts the example below of an ‘out of tune’ dialogue, where response becomes disjointed. It appears, thus, that ‘response’ is at the core of all dialogic process, be it successful (satisfying) or not.

Being out of tune

And then in dialogue I think I felt again that our dialogue wasn't so much in tune and it felt a bit frustrating and confusing when we didn't understand each other. When we didn't seem to be kind of communicating in a way that was responsive to each other. Sometimes I felt like I didn't know how to respond, sometimes I felt I didn't feel that I got the response that I wanted. And at times I think I'd keep trying, to try and get a good response and other times I felt like giving up.

NHS Lab participant (Workshop 4)

The repetition of the word ‘response’ in this extract is striking: *“When we didn't seem to be kind of communicating in a way that was responsive to each other”; “(s)ometimes I felt like I didn't know how to respond”; “I didn't feel that I got the response that I wanted”; “try and get a good response”*. Response is a central phenomenon within the intersubjective experience for both patient and clinician. Dekeyser et al (2011) suggest that the relational body, and I would add the moving body to that, becomes the crucible of this dialogic exchange particularly in working with vulnerable patients:

...(W)orking with clients with severe communication difficulties, using body-based metaphors to learn deeper empathic responding, and drawing on one's body as a source of empathy. The dialogical, body-oriented perspective on therapeutic empathy is at the same time both more grounded in lived experience and better located in a wider human context of relationships and social interaction.

Dekeyser et al, 2011, p. 120.

Based on the analysis offered in this section, it may be argued that intersubjectivity forms the relational ground for kinaesthetic empathy through an acknowledgement of co-creating subjectivities, mutually recognised and constructed with(in) their similarities and differences and manifesting via a reciprocal dialogic process.

5.1.4 Socio-political Dynamics

The fourth component of kinaesthetic empathy emerging through this investigation involves the Socio-political Dynamics manifesting within the (clinical) moving relationship. Four subthemes inform the discussion of this category: ‘power and control’, ‘responsibility’, ‘culture’ and ‘environment’.

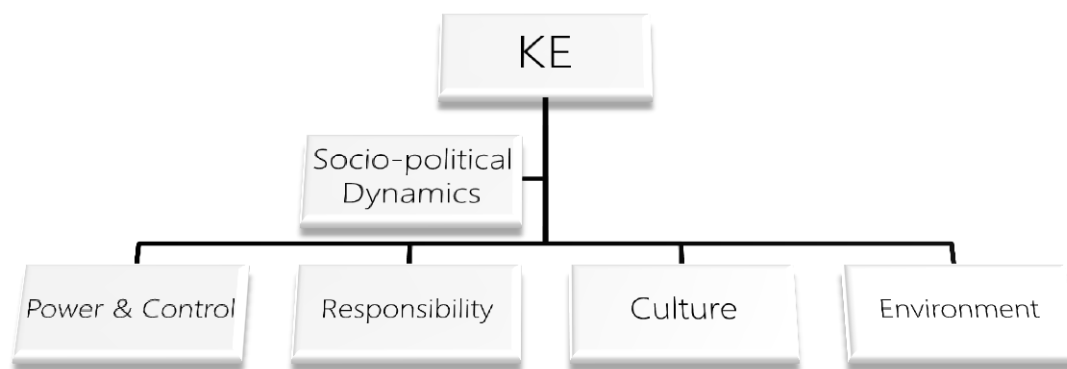


Figure 18: Socio-political Dynamics subthemes

5.1.4.1 Power and Control

Research participants identified ‘power and control’ as recurrent tensions in their relational movement exchanges particularly in response to their explorations of the ‘leader’ position, physical contact and touch. In the first example an NHS Lab participant discusses her embodied response to the ward round, a multidisciplinary assessment forum where patients’ progress and care plan are reviewed on a weekly basis.

Sometimes we have to take charge

I put here 'in control', I did think about ward round myself and you know power, being in charge...yeah. But I think we, although we work with the clients but, we also try and sometimes we have to take charge, when we become prescriptive in terms of treatment and things like that.

NHS Lab participant (Workshop 1)

The research participant identifies the potential power imbalance, “*being in charge*”, embedded in her clinical relationships with clients due to the “*prescriptive...terms of treatment*”. The tension, she describes, between “*work(ing) with the clients (and) also try(ing) and sometimes hav(ing) to take charge*” is constructed systemically as Meekums (2006) observes: “(d)ifferent positions carry different kinds and degrees of power” and as she goes on to explain, “(w)e construct narratives about our experience, influenced by discourse, in which we position ourselves and are positioned by others” (p. 168). This deconstruction of power relations in the context of positioning points to autobiographical, relational and political entanglements (Allegranti, 2015) manifesting (with)in our (moving) relationships as illustrated by the following research participant excerpt. During the third Embodied Practice Focus Group participants were invited to explore their embodied responses to touch (and physical contact) through experimentation of passive, active and relational touch. In the example below the research participant reflects on her experience of guiding another ‘passive mover’ in space through the use of touch.

It felt a bit out of control

Yeah...It felt a bit, at times it felt a bit out of control, at times it felt like ok I can do what I like here. And that means that I can either be empathic with his movement, try tune into which way he is going to go or I can just do this...just push him away if I feel like it or pull him that way if I feel like it so I was playing around with those two ...yeah so there was that sense, I've put here, 'powerful /disempowered' those two things.

Studio Lab participant (Workshop 3)

The research participant recognises that once she found herself in a position of ‘control’ she identified her position as ‘powerful’, in reverse describing her partner’s role as ‘disempowered’. The clinical implications of the power tension that healthcare professionals face, ‘working with clients’ and ‘being in charge’, are many and important (on personal, relational and systemic levels). Examples of this tension include manual handling practices (used in general practice and elderly care) and rapid tranquilisation, restrain and seclusion

practices applied in mental health. Meekums urges dance movement psychotherapists to consider “how we position ourselves or are positioned by the institutions within which we practice, teach and research” (2006, p. 168). Arguably, cultivating an awareness of relational, systemic and institutional interrelatedness is pertinent for all healthcare clinicians.

In the next two examples the passive role within the relational touch experiential is explored. Two research participants discuss their embodied responses to being led by another mover through the space. Interestingly, in the first example a Studio Lab participant frames the power dynamic in the context of therapeutic containment.

In the doing of it I didn't feel disempowered but watching it I felt this theme of power and disempowerment

What I was struck by was that when I was in a not-responding mode, similar to what you were saying I think around thinking of clients from mental health ward perspective as well, around you know what does it feel like being moved around, into a room, out of a room, into seclusion, out of seclusion et cetera... but what came up for me was that I just wanted to yield it was like 'ah thank you for just doing this for me'... 'can you just carry me' and I wanted to close my eyes and just melt, I thought that was a very interesting response. So in the doing of it I didn't feel disempowered but watching it I felt this theme of power and disempowerment.

Studio Lab participant (Workshop 3)

The research participant reflects that “*watching (the touch experiential she) felt this theme of power and disempowerment*”, however “*in the doing of it (she) didn't feel disempowered*”. This reminds me of the embodied reflection example discussed in 5.1.3.3 Similarities and Differences (pp. 107-110) where participants explored the mover and witness position to reflect on their embodied relational understandings of kinaesthetic empathy. In a similar fashion here, the research participant discusses the ‘bodily shift’ (Gendlin, 2003) she experienced by stepping into the passive role during the touch experiential. Instead of her anticipated feeling of disempowerment she experienced a sense of safety and release: “*I just wanted to yield it was like 'ah thank you for just doing this for me'... 'can you just carry me' and I wanted to close my eyes and just melt*”. This is akin to the psychodynamic notion of containment which includes the therapeutic contract of safety (and confidentiality) between clinician and client. Containment also refers to the therapist’s (embodied) countertransference “so that psychologically the therapist embodies some significant person in the patient’s inner world” (Rowan and Jacobs, 2002, p. 39). In this sense the therapist is called upon to ‘hold’ or contain the client’s unprocessed (often fragmented) psychological material. Through

perspective taking and dialogic unpacking (facilitated both verbally and non-verbally) the client's marginalised states of being gradually become manifest. The notion of 'holding' which the research participant above describes as 'yielding' also speaks to Winnicott's (1971) idea of the 'holding environment' present in the primary carers' capacity to attend to baby's needs. The infant is dependent on her parents' holding, which in turn provides a secure (attachment) base (Bowlby, 2005) from which she may begin to develop an (inter)personal sense of self (Stern, 1984). Another research participant experienced the passive role (within the touch experiential) as 'dependency':

I didn't have a say and I had to trust them blindly

For me for the first exercise where I was passive I felt like I was depending on P1 and like I was, someone was controlling me, I didn't have a say and I had to trust them blindly, which felt you know a bit worrying. At one point it felt like some of the movement, I didn't know where she was going, you know she was confused back and forth, back and forth and I was like 'what's going on here' you know (laughs), 'you need to look after me!'

NHS Lab participant (Workshop 3)

Both these excerpts point to power dynamics embedded within the therapeutic relationship in healthcare contexts. Discussing their research study (Performance Based Approaches and Moving Toward Kinaesthetic Understandings of Illness in Healthcare) Nunes Tucker and Price (2010) highlight the following paradox: "the skill of empathy appears to be embedded culturally and yet – like any performer attempting to transfer innately human skills into a public/professional arena – the nurse must relearn their empathic responses in order to apply them within a professional context" (p.191). The authors use the analogy of 'empathic impulse' in performance training towards supporting clinicians' safe empathic relating to their clients:

In order for the nurse to be effective as a carer a similar process must occur during which the technical aspects of the role are embodied; a professional discipline and framework must be learned by rote in order that the movements of spontaneous caring and existential encounter may be facilitated. A committed performer will know that only when a secure technical framework is in place can the risk-taking activity of improvising 'in the moment' occur.

Tucker & Jones, 2010, p193

This view suggests that kinaesthetic empathy may be developed pedagogically within medical and healthcare training. During a presentation I gave, discussing the distinction between the two research groups involved in my research project on the basis of their

embodied training (and lack of), a senior healthcare clinician objected to my assumption suggesting that nursing training is actually based on relational practices and role-playing techniques. I suggest that perhaps there is an ontological and an epistemological difference between the moving body *in* practice (enactive model used in healthcare) and the moving body *as* practice, modelled for example by Performance Based Approaches to Kinaesthetic Empathy (Nunes Tucker & Price, 2010), Performing Medicine (Willson, 2014) and ‘intersubjectivity in motion’ (Allegranti, 2013). This distinction was made particularly obvious to me during a group experiential session I led for senior psychiatrists. Consultants were invited to kinetically explore their own positions and embodied metaphors emerging within non-verbal intersubjective exchanges. After the experiential a senior psychiatrist reflected: “I always thought consultants were experts in non-verbal communication. After your workshop I realise that what we are experts in is making assumptions and that’s where all the misunderstandings happen” (Perinatal Strategic Event 2014, Royal College of Psychiatrists).

Issues of clinician/patient power imbalances, particularly with reference to mental health, have been investigated by different researchers in recent years (Laugharne & Priebe, 2006; Cleary, 2003; Walker, 2006; Gilbert et al, 2008). Through their user-led research, Gilbert et al. (2008) deconstruct therapeutic relationships as established on the basis of safety and trust:

Both safety and trust were important in influencing the patient experience and the consequences of positive therapeutic relationships in hospital. The issue of safety was key to how relationships were experienced in hospital. With one of the functions of hospital being that of a place of safety, service users defined safety both in terms of safety from themselves and safety from others.

Bio Med Central (electronic paper)

Safety and trust within healthcare contexts are closely linked to the notion of responsibility, a by-product of power and control, the following participant narratives illustrate this point further in the context of ‘responsibility’.

5.1.4.2 Responsibility

During the touch experiential involving a leader/follower and a passive/active mover it became obvious that research participants experienced a sense of ‘responsibility’ within their embodied interactions. The first two excerpts are from a Studio Lab and an NHS Lab

participant discussing the feeling of responsibility that they experienced when embodying the role of ‘looking after’ another mover.

Am I keeping her safe, am I keeping her safe

(W)hen it came to doing the leading I felt, I was constantly questioning that ‘am I keeping her safe, am I keeping her safe?’ and what I was really struck by, at some point everybody was witnessing and it was just the two of us in the room and I was even more aware of ‘now I really need to keep her safe’.

Studio Lab participant (Workshop 3)

When I was the one in control I felt responsible

And when I was being the one in control I felt responsible because she was relying on me and obviously I had to be confident and competent in whatever I was doing because somebody had their trust in me. And I have to have knowledge of what I am doing and to make them feel safe again, which it seemed to work at the time. Because I think at one point you had your eyes closed and you were walking.

NHS Lab participant (Workshop 3)

In her analysis of the ‘Social Extensions of the Body’ Grosz (1994) conceives the surrounding space of a person’s body boundary as a ‘zone of sensitivity’:

The size and form of this surrounding space of safety is individually, sexually, racially, and culturally variable. But even for one and the same subject, the space surrounding the body is not uniform: it is “thinner” in some places (for example the extremities, which more readily tolerate body contact than other zones) and “thicker” in others (which are particularly psychically, socially, and culturally “privatized”). Moreover, some people’s behaviour is regarded as obtrusive while the same behaviour in others is welcome...the lived spatiality of endogenous sensations, the social space of interpersonal relations, and the “objective” or “scientific” space of cultural (including scientific and artistic) representations all play their role.

pp. 79-80

The ‘zone of sensitivity’ Grosz (1994) talks about is particularly tangible within clinical encounters. I am interested here in the language participants use to articulate their notion of responsibility experienced through their embodied explorations: “*at some point everybody was witnessing...and I was even more aware of ‘now I really need to keep her safe’*” and “*I had to be confident and competent in whatever I was doing... I have to have knowledge of what I am doing*”. In the first example the research participant identifies that others’ witnessing (of her leading) intensified her sense of responsibility. In the second example the research participant

relates responsibility to a set of skills assigned to her as the leader: ‘confidence’, ‘competency’ and ‘knowledge’. Participants’ accounts are reminiscent of numerous national policies, professional bodies and independent regulators monitoring healthcare services, and by extension the clinicians and service providers. The Care Quality Commission (CQC), the independent regulator of health and social care in England, states: “We monitor, inspect and regulate services to make sure they meet fundamental standards of quality and safety and we publish what we find, including performance ratings to help people choose care” (Care Quality Commission website). Understandably, clinicians’ duty of care becomes synonymous with accountability and responsible practice. It is not surprising then that participants’ embodied exploration of leadership would bring on feelings of responsibility. As the next participant highlights power is (about) responsibility:

Once you have the power you have also the responsibility

(T)his thing about trusting it has to do about the responsibility of the person who has the power. Because once you have the power you have also the responsibility, you have the choice in your hands...

Studio Lab participant (Workshop 3)

Ethical (institutional) practices reflect the collective (societal) moral responsibility that the public subscribes to (Ramazanogly & Holland 2004). For example, society expects that children’s wellbeing will be safeguarded within the educational system in the same way that healthcare services are assumed to protect patients under their care. However, arguably, there is a thin line between safeguarding and oppression. For example detainment under the Mental Health Act (1983) is implemented on the basis of safeguarding the vulnerable mentally ill person and their community. As the Mind (2015) charity outlines: “About a quarter of people...are in hospital without their agreement. This is because they have been ‘sectioned’ (or ‘detained’) under the Mental Health Act 1983. They are called formal patients. If you are in hospital as a formal patient you will not be free to leave and will lose some other important rights available to informal patients” (Mind website). It follows then that a legal intervention, such as the Mental Health Act (1983), will significantly influence the power dynamic within the clinician-patient relationship. I agree with Allegranti’s (2015) assertion:

(W)e need to recognise that women, men and children are sovereign, that we are the main protagonists of our personal and public embodied performances, and then with a sense of responsibility, take action based on that realisation.

Therefore, it is worth considering that the empathic possibilities within our therapeutic encounters are context-dependent. Arguably, clinicians must straddle personal and professional tensions in mindfully positioning themselves within a clinical system that both protects and (potentially) oppresses its service users.

5.1.4.3 Culture

A further conceptualisation of the Social-political Dynamics of kinaesthetic empathy involves ‘culture’. Culture, as a thematic concept, emerged particularly within the relational explorations among research participants. Culture is used here as a broad term and describes co-researchers’ individual and intersubjective ‘lifeworld collages’ made up of ethnicity, sex, gender, age, personal background, language, experience, sexuality, religion and movement practices. In the first excerpt a research participant discusses culture from an ethnic and movement perspective.

Am I going to be ok with this, being touched

I wondered about cultural sort of things when I went up I was like ‘oooohhh am I going to be ok with this, being touched’ I wondered whether there was a cultural element for me in that because originally I wanted to touch with hands as well, for me I felt this is where we meet first and then we can bring shoulders in, and that’s my dance background as well. So I’m a partner dancer and we communicate through hands and it takes a long time to then develop that relationship where you start bringing shoulder and chest and back together. And I noticed that for myself. So culture and then movement culture...

Studio Lab participant (Workshop 3)

Next an NHS Lab participant describes the ‘awkwardness and relief’ she experienced in dialogue with other research participants:

There was some awkwardness at times and then relief

I picked up on the fact that there was some awkwardness at times and then relief when there was an understanding between in the dialogue. The awkwardness was when people were trying to work out what the other person was expecting ... and then the relief would come when there was like a role play and success. I also was thinking more about awkwardness and touch was relating it to society...looking at gender, roles, age, cultural all those things that you have to work with on a day to day basis and how significant they can be.

Another participant navigates the cultural tensions of her intersubjective contact with others through a process of ‘checking what is ok’. Interestingly she recalls personal embodied narratives as further indicators of acceptable cultural practices in the moving relationship.

Checking what is ok

When there was the dialogue of the touch it was quite similarly my experience the sort of quite suggestive, quite playful but I found the kind of checking of what is ok that seemed quite important. I felt that some types of touch brought, sort of they took me back to my childhood that was like ‘catch me if you can’ in a kind of playful aspect... or some were more sort of a hand shake like what kind of hand shake, what is acceptable in some countries. So you could sort of think that if you were from very different sort of cultures how in different places you could be different.

NHS Lab participant (Workshop 3)

What is interesting in the above excerpts is the ‘guess work’ participants engaged in, in their effort to navigate cultural differences, tensions and ‘awkwardness’. From the participants’ narratives it seems that a person’s ‘psychophysical habitus’ (Chang, 2009) may not be visible at first glance: “Historic legacies and social contexts that have deeply rooted significance for the local culture-bearer may be invisible to the outsider, however well-intentioned” (Chang, 2009, p. 311). What seems pertinent in the above participant quotes, is the non-neutrality of the (moving) body and the in/visibility of our complex body politics (Allegranti, 2013). However, our body politics (Allegranti, 2013) may be more readily accessed on a non-verbal kinaesthetic level as the final excerpt illustrates. Below two Studio Lab participants unpack a moment of misunderstanding during a mirroring improvisation. When a mover (P5) is called to embody her partner’s (P4) embodied shaping her response is uncontrollable laughter. As the dialogue demonstrates her (P5) specific associations of the given movement were deeply rooted in her personal and cultural background to the extent that she could not *see* beyond that. In response, the second research participant (P4) unpacks how her partner’s reaction affected her on a personal level.

Everyone comes with our own backgrounds

When I did yours (to P4) I started laughing...I couldn’t (have anticipated) what happened, because...when you did it, I had a certain imagery...it was a very specific thing what you did

for me. **P4:** Yeah because you couldn't stay in it for very long. **P5:** I couldn't...**P4:** You had to get out of it immediately so...**P5:** laughs **P4:** ...it was, it felt quite personal because I had...all these feelings like 'Oh is my movement horrible or'...**P5:** No it wasn't that it was...**P4:** ...you know 'is it uncomfortable, is it nasty, is it you know like stupid'? You know, you were laughing... **P5:** I wanted to say that it wasn't personal at all it was just... a position for goodness sake! **P4:** And how personal our own movements are... how much...they mean and it can sort of get right to the heart of me you know. And I know enough to know that it's my own response, which is interesting... **P5:** But I was also, for me it really hit me that moment because it was just that section that happened and I couldn't hold it because it was so strong and I was thinking how, because I am not a therapist I am a choreographer, so I was thinking how much sometimes we expect people to see something which actually is not there... so it's this thing about intention...because everyone comes with our own backgrounds... And so my background made me laugh in that moment and...nobody would control that...

Studio Lab participants (Workshop 2)

In this narrative the autobiographical and relational entanglements (Allegranti, 2015; 2014) in the intersubjective meaning making process become visible as research participants shift between different perceptual positions. To borrow Boas' (2006) model of Transcultural Competence in DMP participants initially identified their first person position (*"I started laughing because it was a completely different thing", "it felt quite personal"*). They then acknowledged the other person's experience (*"Yeah because you couldn't stay in it for very long", "I wanted to say that it wasn't personal at all"*), before critically evaluating individual roles within the co-created system (*"I know enough to know that it's my own response", "because I am not a therapist I am a choreographer, so I was thinking how much sometimes we expect people to see something which actually is not there"*). Boas (2006) discusses the tension between recognising and transcending culture:

The very idea of culture limits and divides us. Yet only the dominant can indulge in cultural ignorance. To avoid becoming naïve mini-tyrants and colonisers, we must acknowledge culture. And we must transcend it. How do we hold both: body and no body; culture and no culture? The answer may be in the space we make for these seeming contradictions, within the present moment that is both coming into being and passing away. Paradoxically perhaps, our practice may be all the more ethical when we relax the boundaries of the self and give our full attention to the here and now of the myriad diversity between us and within us.

p.125

As shown by the participant examples in this section, attending to their culturally embodied kinaesthetic experiences allowed co-researchers to further explore and articulate socio-political tensions experienced in their (moving) relationships.

5.1.4.4 Environment

In this section ‘environment’ is considered as an additional factor influencing socio-political dynamics within participants’ kinaesthetic experiences in the clinical context. Interestingly, this theme was particularly relevant for the NHS Lab group as demonstrated by the two excerpts below. In the first example, a research participant discusses the interrelationship between changes in the environment and changes in her kinaesthetic experiences.

My environment quite quickly changed

My environment quite quickly changed [from] calm and productive [to] chaotic and stressful. And in my body that...was displayed through by pace of moving, moving much more quickly when I felt stressed and when things felt chaotic, my body language was less open. When things felt calm and good my body language was kind of relaxed and open and my movements were less restricted and more flowing. I think there was an element of feeling frustration with things changing and not knowing what to expect from one moment to the next.

NHS Lab participant (Workshop 4)

The participant’s description relates to Gibson’s notion of affordances (1979) (also discussed in 5.1.1.3 Affect in Effort pp. 92-97): “To perceive is (among other things) to learn how the environment structures one’s possibilities for movement and so it is, thereby, to experience possibilities of movement and action afforded by the environment” (Noe, 2006, p. 105). This is further echoed by the second research participant’s narrative where he particularly reflects on the impact physical space has in his working experience.

A lot of the space that we have actually impedes the work we do

I think sometimes, a lot of the space that we have actually impedes the work we do and the team work we have because it is very small you are all trying to do things at once and it ends up delaying you, causes potentially frustration. Not because people are being deliberate or they are choosing to do that task now and I’m in the middle of doing that... if we have things to do at the same time and the space that we have actually impedes, you know, makes us more anxious than we need to be. And I tried to really do that, I tried to show that, you know, I think I tried to at some point say to you ‘I’m in the middle of doing this so I can’t get it because I’m constricted here’. Because ...there is no animosity, it’s just the resources, the space make it a lot more difficult to do the jobs you need to do. And what the different parties have to represent...

NHS Lab participant (Workshop 4)

In both excerpts there is a clear link between participants' physical and kinetic experiences of their environment and their emotional responses: "*moving much more quickly when I felt stressed and when things felt chaotic, my body language was less open*" and "*the space that we have actually impedes, you know, makes us more anxious than we need to be*". The implications of the environmental impact on the clinical empathic relationship involve equally the clinicians' wellbeing, the quality of compassionate care provided by the service and the client's lived experiences within the clinical context. This is particularly pertinent for in-patient and institutionalised clinical settings where stress factors are likely to be more acute.

5.1.5 Embodied Knowing

The fifth component of kinaesthetic empathy investigated in this study involves 'embodied knowing'. Drawing from co-researchers' accounts, embodied knowing here is considered in relation to (embodied) perception and meaning making. This section illustrates that embodied (relational) knowing is *mobilised* by kinaesthetic experiences in three ways: by 'stepping into another's shoes', by accessing different 'layers of understanding' and by providing the 'context' for individuals' embodied intersubjective encounters. One of the questions research participants investigated during the Embodied Practice Focus Groups involved 'what can be known of the other (with)in my own moving body'? This focus was also formally outlined as a methodological question: 'How do we perceive through our moving bodies'? (see Introduction pp. 15-23).

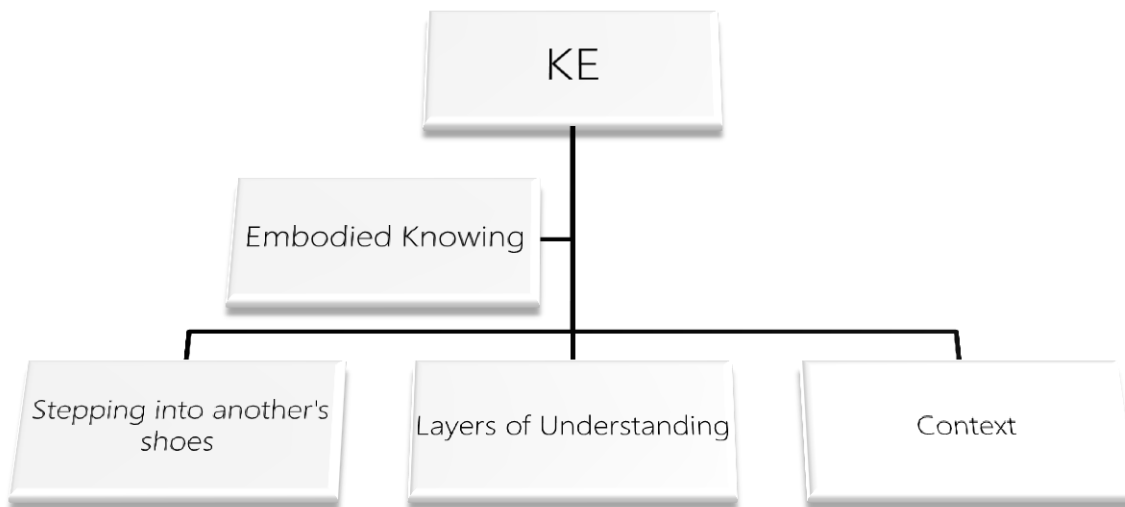


Figure 19: Embodied Knowing subthemes

5.1.5.1 Stepping into another's shoes

A recurrent theme in participants' reflections related to their 'encounter of others' through their own embodied improvisations. Research participants described instances when certain embodied experiences reminded them of clients they were working with as the following example demonstrates:

It's making me look at the picture very differently about what she is actually saying

For some reason, there is always someone... one patient that will always spring into mind. And then this time around it's more about the kind of physical energy and release so the person I am working with at the moment I am finding quite difficult to build up just the first basis of the therapeutic rapport. And I am trying to think of my interactions each time I've seen her it's quite short and just looking at what she is actually, I guess it's making me look at the picture very differently about what she is actually saying, the non-verbals.

NHS Lab participant (Workshop 2)

The NHS clinician describes how the “*physical energy and release*” she experienced in her movement exploration reminded her of a client she had been “*finding quite difficult to build...the first basis of the therapeutic rapport*”. She then identifies that her embodied experience “*(i)s making (her) look at the picture very differently about what she (the patient) is actually saying, the non-verbals*”. The clinician here describes a perceptual shift achieved

through literally moving between positions; hers and the client's. Moreover, a Studio Lab participant described this process as “*venturing into the world of the clients*”:

Venturing into the world of the clients

I found myself thinking what would it be like to be a patient or a client. I mean I work in a hospital and patients are moved and handled all the time so I just kind of embodied that sense of, you know, sort of lying on the bed feeling really sick, what's that like and having someone push and pull. So venturing into the world of the clients...and the felt sense was quite difficult, because it felt quite fragmented, there were times when I felt quite calm, quite trusting of P2 and it was quite fun (laughs) and other times when there's a fear of 'what next'...

Studio Lab participant (Workshop 3)

Here the research participant describes her ‘felt responses’ (Gendlin, 2003) through her embodied exploration ‘as if’ she were the patient. Even though the participant cannot ‘know’ what and how her patients are experiencing when they “*are moved and handled*”, she does know (through her own “*felt sense*”) what her own lived experience of being moved and handled is: “*it felt quite fragmented, there were times when I felt quite calm, quite trusting of P2 ... and other times when there's a fear of 'what next'*”. In both the above excerpts the clinicians’ bodily shift was linked to their perceptual shift; that is their bodily meaning making informed their understanding of their clients’ lived experiences. In the third excerpt an NHS Lab clinician builds on this process and differentiates between “*imagining what it might feel like to be the patients*” and “*embodying their movement or behaviour*”:

You feel more how they might feel

And then I think we spend a lot of time imagining what it might feel like to be the patients and what it looks like for them and how they might feel, those kinds of things, but you don't quite go to the point of putting ourselves sort of in their shoes as much as when you are embodying and show movement or behaviour. I mean we don't start behaving like them, although we might, at times without meaning to but it is interesting to kind of try and behave like them and then you do get a different feeling. You feel more how they might feel.

NHS Lab participant (Workshop 4)

The clinician makes the interesting point that “*behave(ing) like them (patients)...you do get a different feeling. You feel more how they might feel*”. It seems that the clinician identifies two processes here: (i) what she classifies as *behaviour* in the observed movement of her clients

and (ii) the *feeling* she (the clinician) experiences in her embodiment of her clients' movements. However the *behaviour* the clinician identifies in her clients' movements is in fact the patients' actual living, moving, feeling experience in the world as Sheets-Johnstone (2009) explains:

What emerges and evolves –ontogenetically and phylogenetically – is not behaviour but movement, movement that is neatly partitioned and classified as behaviour by observers, but that is in its own right the basic phenomenon to be profitably studied; what is of moment to living creatures is not physiology per se but real-life bodily happenings that resonate tactilely and kinesthetically, which is to say experientially; what feels and is moved to move is not a brain but a living organism.

p. 214

Therefore, to reframe the clinician's conceptualisation above in line with Sheets-Johnstone's notion: putting ourselves in the shoes of another involves embodying (their) *movement*. This in turn allows us to kinaesthetically resonate with 'real-life bodily happenings' manifesting intersubjectively.

5.1.5.2 Layers of understanding

Another conceptualisation emerging in the focus group discussions involved the idea that our understanding of others is informed by different 'layers' of information. During a partner experiential an NHS Lab participant reflected that "*there was a lot of information there*" as she tried to come closer to her partner's embodied experience:

There was a lot of information there

It was interesting to sort of looking at your posture I wasn't...there was a lot of information there and some, perhaps a bit conflicting...there was this smile but looked like the feet were a bit off the ground and I wasn't quite sure what was happening with the hands...but then, so there was an element of getting somebody off guard or something kind of abrupt happening but yet the smile was there kind of giving me another message. And then when I tried it, it actually felt quite relaxing and it felt quite sort of safe and grounded in a sort of...so it was quite an interesting contrast of experience.

NHS Lab participant (Workshop 2)

Interestingly the clinician's process in making sense of her partner's experience involved perceiving (witnessing) her partner's movement and then sensing that movement for herself. The participant seems to be identifying a difference between her assumed understanding

through witnessing and her experience of trying out her partner's movement. Sheets-Johnstone's (2009) describes the inseparability between movement and sense perception.

Sensing and moving do not come together from two separate regions of experiences, fortuitously joining together by virtue of their happening in, or being part of, the same body. Perceptions are plaited into my here-now flow of movement just as my here-now flow of movement is plaited into my perceptions. Movement and perception are seamlessly interwoven; there is no mind-doing that is separate from a body-doing.

p 32

As already discussed in this chapter, what I have come to describe as, 'embodied reflection' was investigated in multiple ways in this research project. During the final Embodied Practice Focus Group participants were invited to explore different roles and positions through a bodily reflective process (akin to Sheets-Johnstone's description above). A Studio Lab participant described this process as "*reflecting on things from a movement perspective*":

Giving space to reflecting on things from a movement perspective

...having the space today just really really reminded me of how giving space to reflecting on things from a movement perspective can just bring so many different layers...so many different layers. It's really essential, I think, part of practice and shouldn't be forgotten... embodying the setting and my professional identity in the setting was really interesting from that perspective. Just how, yeah, how thick that layer I guess, how heavy that layer (laughs) feels...and it really, the stripping off was like 'woohooo!' (laughs). You know I think the very fact of having that layer changes what is underneath. Or what needs to be revealed underneath.

Studio Lab participant (Workshop 4)

The research participant talks about multiple layers "*chang(ing) what is underneath*". This is echoed in an NHS Lab participant's response of the same (embodied reflection) experiential where he realises that there were "*things that (he) hadn't appreciated and hadn't quite got*" (prior to this experience):

The things that you hadn't appreciated and hadn't quite got

I think you realise that it was more the things that you hadn't appreciated and hadn't quite got. But you improved dramatically because you are more aware. Or perhaps if someone is doing this or doing that it could be sensing how important, you know, the way you feel [...] and how different audiences and people you kind of approach things and communicate things non-verbally in different ways.

In other words, these different layers of understanding participants describe, brought into focus (therefore into awareness) individuals' embodied knowing of themselves and others. Another Studio Lab participant draws attention to: "*what we hold in our bodies at any given moment in the context that we are in and how it shifts*".

What we hold in our bodies at any given moment

...what I found fascinating was in that last exercise I slipped straight into the client role and had wanted to explore different roles but found it difficult to slip back out of that. I felt so in it, so immersed, so present and I was trying to figure out what these themes were that were coming up and I was struck by our interaction and at one point I think I was thinking 'is this appropriate?' Boundaries, 'is this appropriate'? (laughs) 'I am sharing my gum with you (laughs) is this ok'? And at one point I thought 'can everyone stop can we just have this conversation, are you ok, I had this in my mouth are you ok with it?' (laughs) So something around what we hold in our bodies at any given moment in the context that we are in and how it shifts. And for me it was like what we carry with us, and being able to move that, there was layers of information there, yeah that I experienced today that I thought were really profound.

Studio Lab participant (Workshop 4)

The participant's example points to a further layer involved in moving bodily experiences: 'context'. This is further unpacked in the final subsection of the Embodied Knowing category as a constituent theme of kinaesthetic empathy.

5.1.5.3 Context

Context was explored particularly by the Studio Lab participants in a similar vein to Watson & Greenberg's (2011) suggestion: "people interpret and understand others' actions in terms of the context in which they occur" (p. 130). The first extract is from a research participant grappling with the very notion of context as relationally co-constructed rather than as an independent influence.

By interacting with each other there was another context created

In the beginning I was so doubtful about what was going to happen...because I was thinking that 'this is not possible to happen because we are already out of context' but then obviously by interacting with each other there was another context created.

Studio Lab participant (Workshop 4)

Another research participant further considered how a personal (“*this is me*”) context fits in with a broader (social) context:

This is me’ and this is what I do and how I do it

I am just curious about that now...that letting go and being completely immersed in something just because one has to be immersed in it in the moment. And I guess that relates to, some clients that just are immersed in the moment because that is what they have to do...that’s what the compulsion is or the need is and to be able to stay with that. ... when I was speaking about ‘being myself’ and just carrying on being me doing what I do in my own way, regardless of anybody else in a way. Saying ‘well it doesn’t really matter because I am in my world, doing my thing, in my way and yes we interact and do things but I am still me doing what I do and nobody else does it like me’. And that’s something I often hold in mind anyway, that that’s what I do in the world anyway. But it’s interesting, I think, having an awareness of that, of positioning myself as that of ‘this is me’ and this is what I do and how I do it and yes I am respectful of others and context and things, but I do me.

Studio Lab participant (Workshop 4)

Watson & Greenberg (2011) suggest that “(i)f therapists are to be maximally empathic, it is important for them to have a sense of their clients’ current and past contexts and life histories in order to build an adequate understanding of what is emotionally significant for them and to gain an understanding of what motivates their actions” (p. 130). Even though I agree with the authors that access to past and current contexts, within which the client is situated, often supports a deepening of the therapeutic process, I would argue that in DMP this information is readily (and non-verbally) available through embodied practice. In my own clinical experience, clients often express their exasperation with recounting (often traumatic) personal experiences to each different clinician they encounter (for assessment and/or review purposes). DMP, and broadly speaking the arts therapies, process allows the client to tell their story through words, if necessary, but the value of the work is non-verbal integration. The creative artistic process therefore provides an additional *context of embodied knowing*. It further affords the client a safe (reflective) distance in that painful material may be contained within their ‘art object’ (via the dance movement, the music or art making process). In turn the ‘art object’ is recognised as an articulation of the person’s experience in the ‘here and now’ rather than a definitive (diagnostic) statement of the person’s psychological state.

To illustrate how this process unfolds in DMP I will share a vignette from my own clinical work with a client (that I will call John) diagnosed with paranoid schizophrenia. The discourse played out in John’s formal reviews involved the multidisciplinary team prompting the client to reflect on his ‘paranoid’ ideation (in order for the team to assess his ‘insight’ into

his mental illness) and the client denying this (thus confirming his ‘lack of insight’). In this co-constructed context the ‘crux’ of John’s story was lost between his diagnosis, the clinical MDT perspective and the client’s own lived experience of himself. When clinicians’ recounted past incidents to John of his erratic and paranoid behaviour drawing from his forensic record, John would maintain that he had no knowledge of such events. John had been a regular member in my DMP group for a few months when he decided to create a timeline of his life’s journey within the session. John had not unpacked his personal narrative in the session before, therefore I was pleasantly surprised by his initiative. John created a pathway in the space locating in it important signposts such as ‘birth place’, ‘childhood’, ‘school years’, ‘moving house’ etc. Even though his narrative appeared cohesive, as he laid it out in the space, the *context* of his story became visible only when he actually embodied his journey. During his transition from one life event to the next, John realised that there were gaps in his story. While his embodiment of childhood was confident and sophisticated (through his enactment of carefree sports activities), his embodiment of his university years, precipitating his hospital admission, was ambiguous and unrefined. These gaps (linked to his co-constructed personal narrative) experienced through his movement improvisation created a tangible relational context in the therapeutic process. We could now name the gaps for what they were, absent pieces in his embodied jigsaw puzzle. Rather than discussing life experiences that John had clearly marginalised, we worked together towards filling in these gaps by constructing a new movement narrative (context) towards his meaning making process of himself in the here and now.

5.1.6 Mirroring

The final concept of kinaesthetic empathy developed in this study involves Mirroring; a fundamental and well documented DMP approach, also theorized as ‘multidimensional seeing’ (Allegranti, 2015), ‘echoing’ (Meekums, 2012) and ‘resonating’ (Fischman, 2009). In this study research participants explored mirroring in relation to ‘intentionality’, ‘observation as reflective distance’ and ‘mutual influence’.

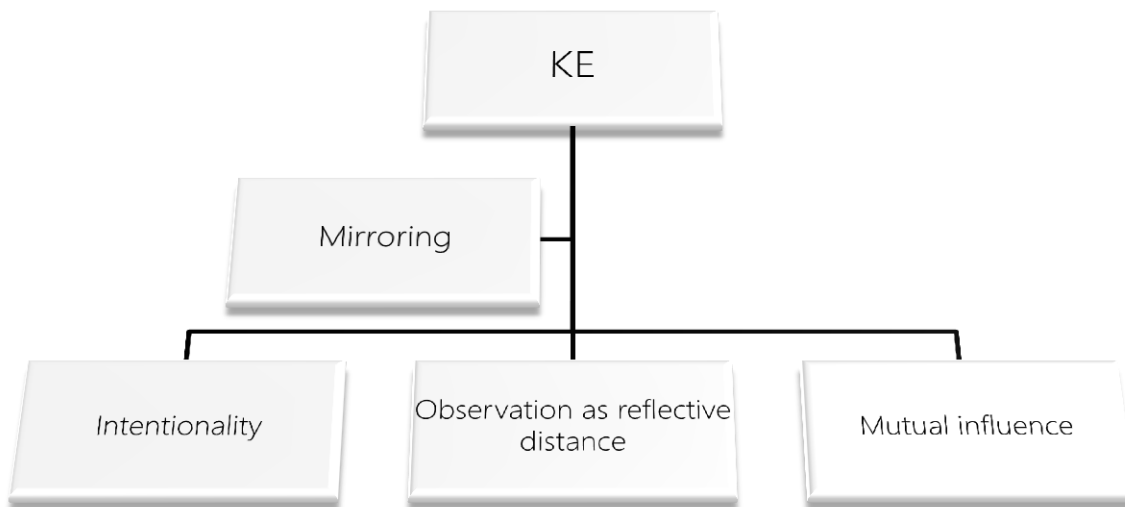


Figure 20: Mirroring subthemes

5.1.6.1 Intentionality

Drawing from mirroring experientials participants discussed the phenomenon of intentionality both from the position of the person doing the mirroring and that of the person being mirrored. In this sense, mirroring was considered as a conscious and intentional intersubjective experience as the first example illustrates. A research participant describes the intention she set for herself in an attempt to mirror (meet) another non-verbally.

I wanted to reflect accurately what she was actually doing

I wanted to reflect accurately what she was actually doing. But I noted as well it was a whole body experience so it was like from the face to the feet, everything it was kind of being mirrored. So when she was more focused on the movement of say an arm and I'd be doing the same but then I noticed that when you were smiling and the eye contact was there I felt that we were mirroring the facial expressions too as well.

NHS Lab participant (Workshop 2)

The NHS Lab participant suggests that she “*wanted to reflect accurately*” what her partner “*was actually doing*”, thus expressing her willingness (intentionality) to understand another’s lived experience. This participant goes on to explain that for her mirroring was “*a whole body experience*” therefore, she committed her attention to the nuances of her partner’s embodiment “*from the face to the feet*”, the “*smiling*”, “*eye contact*” and “*facial expressions*”.

This narrative suggests that the research participant's intentionality to find 'meaning' in her partner's movement (communication), was met by the mover's intentionality to communicate (move) her experience to another. This exchange is echoed in the following two excerpts. In the first example, a Studio Lab participant describes her intention to 'honour' her partner's movement. Then, another Studio Lab participant discusses how she experienced having her movement mirrored back to her.

I wanted so much to honour it

...when you were holding your posture because I wanted so much to honour it to get it, you know to really get it right. So I really wanted to see where your foot was, where your knee was ...I looked at it quite anatomically, I tried to look at it a bit coldly actually, because I thought I'd transposed such a narrative onto to it that I thought I need to, you know, get up walk around and look at it more coldly like ...like a cold marble statue and see where the knee is and the arm is and the head and the gaze. And so I tried to do it like that, but clearly perhaps the feeling that I'd got from seeing it real I couldn't stop myself from... doing it.

Studio Lab participant (Workshop 2)

The Studio Lab participant distinguishes between her visual engagement with her partner's movement and the "narrative" she "transposed" onto it. Therefore, she grapples with the tension between her interpretation of her partner's movement and her partner's actual lived experience. She suggests that the "feeling" she got "from seeing it real" stopped her from perceiving her partner's shaping "like a cold marble statue". This example captures the interweaving of personal and intersubjective metaphors embedded within relational kinaesthetic encounters. Meekums (2012) unpacks the mirroring process in dance movement psychotherapy:

(T)he mirroring process in DMP practice is in fact one of mirroring the movement metaphor, and...this can take any of the three forms that are analogous to the vocal forms of call and response, Greek chorus or echo. The therapist's understanding of the symbolic meaning of the client's movement expression is inevitably filtered through his or her own store of experiences. This calls into question to what extent it is ever possible for one human being to accurately attune to another. However, there seems to be some value for clients when the therapist approximates to their own experience. This allows clients the possibility of 'trying on for size' this fresh but not wholly alien (metaphorical) position and perspective before finding their own.

p. 56

Notably, when the mover reflected on her experience of being mirrored by her partner what she seemed to identify the most was the "emotion underneath".

An understanding that there was something emotive underneath

If you are just observing what's outside like if you've just been mimicking what I was doing, I would have got felt sense of that. But instead what I got was an understanding that there was something emotive underneath, that there was an emotion underneath.

Studio Lab participant (Workshop 2)

The co-researcher here highlights the difference between “mimicking” and mirroring as a process of “understanding”. Therefore intentionality is considered both in relation to the mover’s (intentional) embodied expression and in terms of the ‘follower’s’ intention to meet (embody) her partner’s communication (movement).

5.1.6.2 Observation as Reflective Distance

The role of observation, towards facilitating reflective distance, during the mirroring experiential was explored during the Embodied Practice focus groups. In the first example, an NHS Lab participant describes her observer perspective in witnessing another’s movement.

I closed my eyes and then mirrored what he did and I then felt a lot more relaxed

And then being the other way around so when I was sort of observing you, I initially thought ‘cor that’s going to be awkward’. All I thought was yoga, I haven’t done that in ages and I thought I am not going to be able to do that. And then I noticed that first he had his eyes kind of open but then when he closed his eyes he seemed to really take to the shape, if that makes sense, and then sort of relaxed. And then I kind of thought ‘oh maybe I can do this’ and then when I did it, in the first second or so it was awkward, and again I closed my eyes and then mirrored what he did and I then felt a lot more relaxed. Just like ‘oh I can do this, this is not too bad’.

NHS Lab participant (Workshop 2)

It is interesting to note here the co-researcher’s transformative witnessing narrative. On first seeing her partner’s movement she is caught up in her own assumptions and interpretations involved in her perception “‘cor that’s going to be awkward’” and “‘(a)ll I thought was yoga, I haven’t done that in ages and I thought I am not going to be able to do that’”. Then she hones in on her partner’s movement, and subsequently her meaning making shifts: “*And then I noticed that first he had his eyes kind of open but then when he closed his eyes he seemed to really take to the shape, if that makes sense, and then sort of relaxed. And then I kind of*

thought ‘oh maybe I can do this’”. Another research participant reflects on her experience of observation within the mirroring explorations in terms of ‘physical distance’:

I could only make sense if I took a bit of distance

So I guess the thing I said about distances it was quite nice to realise that for me to watch them I could only make sense if I took a bit of distance. At the beginning I was like, I was engaging as well of course I was, but...but I realised that taking a few steps back made me see the whole picture and also it gave me a clear feeling of ‘this is their space’.

Studio Lab participant (Workshop 2)

Here, observation is considered as a process of “*making sense*” of the “*whole picture*”. However, observation is not only relevant for the therapist as part of their empathic positioning towards their client. Observation is also a key therapeutic intervention that allows the client to both acknowledge their own process and develop interpersonal skills and perspective taking. Siegel (2010) conceptualises the ‘tripod of reflection’ comprising ‘openness, observation and objectivity’. Specifically he explains:

Observation [author’s emphasis] is the ability to perceive the self even as we are experiencing an event. It places us in a larger frame of reference and broadens our perspective moment to moment...Observation offers a powerful way to disengage from automatic behaviours and habitual responses; we can sense our role in these patterns and begin to find ways to alter them.

Siegel 2010 p. 32

The next example illustrates the reflective meaning making of a research participant who observes her partner’s mirroring of her movement:

It was almost like a softer version of what I’d embodied

I think when P4 was embodying my posture when you actually did it, it was like ‘Wow that is really accurate’ that’s really... It was quite moving actually it was almost like a softer version of what I’d embodied so it was like the underlying emotion. And it felt very safe. It felt like ‘Oh right yes she knows what’s in there’ that was really quite striking actually.

Studio Lab participant (Workshop 2)

In this exchange the participant’s experience is validated “(i)t was quite moving actually it was almost like a softer version of what I’d embodied so it was like the underlying emotion” through a relational kinaesthetic sharing mediated by the mirroring experience.

5.1.6.3 Mutual Influence

The final component of Mirroring as a thematic development of kinaesthetic empathy is ‘mutual influence’ or what van Baaren et al (2011) describe as a “nonconscious, low-level, or rudimentary form of empathy” (p. 34). The two research participant excerpts below discuss mutual influence as a “*co-constructed moment*” in the first instance and as a “*natural occurrence*” of mirroring.

It's actually impossible to mirror somebody

It's actually impossible to mirror somebody, it isn't physically possible because so many movements start with the gaze and you need to be looking at the other person so you know we weren't... at no point were any of us actually mirroring...also it's almost for us definitely, and I think in general, impossible to mirror one person to be one hundred percent leading and the other person to be one hundred percent following, because it's just the mutual influence. It was a mutually co-constructed moment a lot of the time you know even though we were sticking to the leading generally.

Studio Lab participant (Workshop 2)

Natural occurrence of mirroring

There is also a sense of natural occurrence of mirroring...it just reminded me of a client that I worked with and that was something that I had to video and when I looked, I was doing a lot of mirroring with her but that wasn't my intention. And it was interesting that there was a movement she did and there was just a slight delay and then I did it.

Studio Lab participant (Workshop 2)

Through their research into ‘imitation’ van Baaren et al (2011) conclude that “(i)n fact, it seems that the condition of *not* [authors’ emphasis] being imitated has the greater impact on behaviour. People expect others to think like them, behave like them, and feel like them. As the Roman emperor Marcus Aurelius knew, empathy is the default, and the absence of empathy is painful.” (p. 38-39). As discussed under 5.1.3 Intersubjectivity (pp. 103-113) mirroring is a deeply rooted phenomenon of early developmental experiences that is an intentionally and mutually constructed reflective process (with)in our kinaesthetic and relational experiences, involving a multitude of similar and different responses.

So far, this chapter has presented the six constituent thematic components of kinaesthetic empathy as investigated in this research project. I use the metaphor of ‘the wheel of kinaesthetic empathy’ to denote the inseparability and mutual influence between the key concepts discussed here. Once the ‘wheel’ is set in motion it is difficult to distinguish between its different parts. However each component contributes uniquely to the formulation of kinaesthetic empathy as illustrated by the relevant sub-themes, participant vignettes and theoretical underpinnings.

5.2 Research Questionnaire

This section presents the qualitative findings of the research questionnaire completed by research participants before and after completion of the Embodied Practice focus groups. Participants’ conceptualisations are categorised in five areas: (i) definitions of empathy, (ii) empathy and the therapeutic relationship, (iii) empathy and non-verbal communication (iv) manifestations of empathy within the therapeutic relationship and (v) embodied learning within the research study. The findings are presented in table format clearly delineating between the research groups’ convergence and divergence of kinaesthetic empathy formulations. Due to the phenomenological orientation of this investigation, and the flexible approach utilised in conducting the questionnaire data collection (see Chapter 4 pp. 58-83), the concepts outlined here are viewed as overarching conceptualisations of kinaesthetic empathy developed over time, as opposed to a measure of kinaesthetic empathy before and after the intervention.

The concepts of kinaesthetic empathy developed through the qualitative part of the research questionnaire are summarised under each thematic category. A broader interdisciplinary discussion of the research findings is conducted in Chapter 8 (pp. 193-218).

5.2.1 Definitions of empathy

NHS Lab	Empathy is sympathy
Studio Lab	Empathy is a process: Actively, mutually, relationally co-constructed
NHS & Studio Labs	Empathy is understanding: feeling, imagining, sharing, internalising
	Empathy is about being with but not merging

Figure 21: Definitions of Empathy

5.2.2 Empathy and the therapeutic relationship

NHS Lab	Holistic treatment care: empathy informs clinical decision making and compassionate care, it gives insight into client's needs and it aids recovery
Studio Lab	Therapy as process over time: Empathy is the ground for therapy
NHS & Studio Labs	Empathy impacts on therapeutic relationship: engagement, rapport, relational tool, safety, trust, support

Figure 22: Empathy and the Therapeutic Relationship

5.2.3 Empathy and non-verbal communication

NHS Lab	Relationship between verbal and non-verbal communication
Studio Lab	Non-verbal communication as an implicit aspect of our being
NHS & Studio Labs	Experience goes beyond language
	Non-verbal communication as the means for empathic interrelating

Figure 23: Empathy and Non-verbal Communication

5.2.4 Manifestations of empathy within clinical contexts

NHS Lab	Developing understanding through practice
	Clinician's self-awareness of own behaviour and boundaries
Studio Lab	Tacit knowing through years of embodied experience
	Impact of work culture and environment on empathy
NHS & Studio Labs	Drawing from own experience to relate to clients
	Containment, discomfort, boundaries

Figure 24: Manifestations of Empathy within Clinical Contexts

5.2.5 Embodied learning

NHS Lab	Increased self-awareness
NHS & Studio Labs	Peer support and multidisciplinary working
	New awareness into kinaesthetic empathy
	Developing insights and skills for clinical practice

Figure 25: Embodied Learning

Chapter Six: ‘Embodied Numbers’ (Quantitative Findings – Fieldwork Stage 1)

Divided into two sections, this chapter presents the quantitative findings of *Fieldwork Stage 1: Data Collection*. First, the complete experimental study is presented (6.1 *EEG Study* pp. 139-167) followed by the quantitative findings of the research questionnaire (6.2. *Research Questionnaire - quantitative components* pp. 168-173). Two groups of participants (NHS Lab and Studio Lab) were recruited for the EEG testing and research questionnaire, which were carried out before and after completion of the ‘Embodied Practice Focus Groups’ (intervention) (see Chapter 4: *Interdisciplinary Methods* pp. 58-83, for overall research design). The quantitative findings discussed in this chapter will later be considered alongside the qualitative findings derived from *Fieldwork Stage 1* (Chapter 5: *Embodied Words* pp. 84-138) and *Fieldwork Stage 2* (Chapter 7: *Kinaesthetic Stories* pp. 174-192) as part of the interdisciplinary formulation of this thesis (see Chapter 8: *Interdisciplinary Discussion* pp. 193-218).

6.1 EEG Study

As discussed in Chapter 2 (Literature Review pp. 24-46), utilizing the scientific method in this research project allows for an examination of the effects of social events and stimuli on neural processing and brain activity (Dickter & Kieffaber, 2014). Many have linked the arts psychotherapies with recent neuroscientific evidence linking kinaesthetic intersubjectivity and mirroring (Allegranti, 2015; Meekums, 2012; Berrol, 2006; Gallagher & Payne, 2014; Preminger, 2012; Folensbee, 2007; Chaiklin & Wengrower, 2009) specifically investigating clinical and neurobiological implications in working with vulnerable client populations such as trauma survivors (Buk 2009), people in the autistic spectrum (Edwards, 2015; Behrens et al, 2012; McGarry & Russo, 2011; Smaritter & Payne, 2013) and with schizophrenia (Shafi, 2014). Electroencephalography (EEG) has also been applied in visual art research investigating cortical motor activation during the visual processing of abstract art (Umilta et al, 2012) and participants’ patterns of electrical activity following painting and drawing (Belkofer & Konopka, 2008). In music therapy EEG has been used to observe fronto-temporal activity modulations in depressed clients (Fachner et al, 2013; Fachner &

Stegenmann, 2013) and during emotion recognition (Sourina et al, 2011). A recent interdisciplinary research project combining EEG experimentation and Capoeira (martial art) comes from Allegranti & Silas (2016; 2014) investigating kinaesthetic intersubjectivity from a neuro-feminist perspective. To date, there is no published literature on the utilisation of EEG methodology in dance movement psychotherapy research. Therefore, one of the goals in applying EEG to this study of kinaesthetic empathy was to further contribute to the development of existing theoretical links and empirical insights between dance movement psychotherapy and cognitive neuroscience.

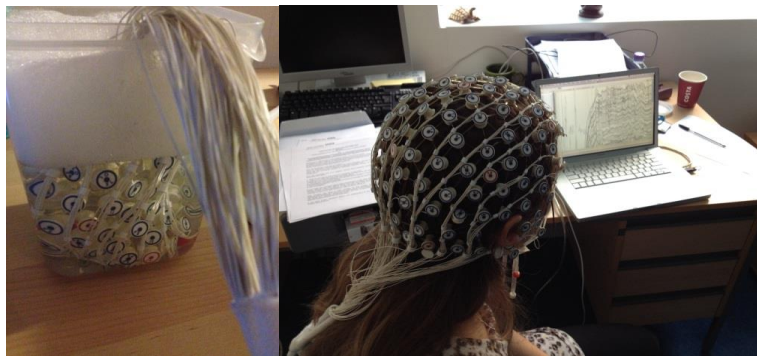


Figure 26: EEG being prepared (left) and worn by research participant (right)

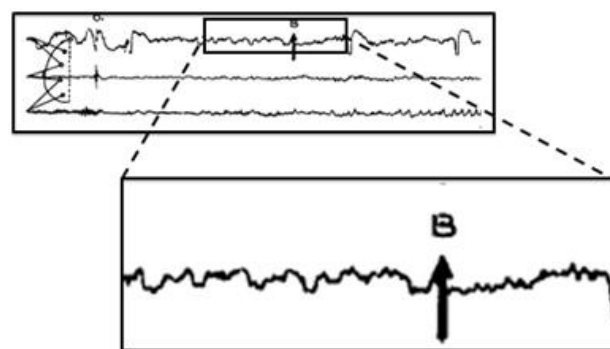
EEG was used in this study to investigate non-observable (and unavailable to us through introspection) aspects of embodied empathy, during live relational and improvisational movement processing. As discussed in Chapter 2, a decrease in power at the mu frequency is a well-established method for measuring motor activation during movement processing. Furthermore, the protocol used to measure mu changes means no specific-event needs to be temporally synced with the EEG recording; something that is difficult to achieve with other methods of neuroimaging or stimulation. Using this specific technique to measure motor activation allows for the following questions to be answered: how does motor activation change after embodied practice training during movement execution, observation and cooperation? As an electrical measurement EEG is arguably a more direct measurement of brain functioning than most other brain imaging techniques (e.g. Functional Magnetic Resonance Imaging; fMRI). EEG is also relatively cheap and portable (Dickter & Kieffaber, 2014). An additional specific benefit to using EEG during live embodied interaction (as implemented in this study) involves the relative freedom of (arm and hand) movement (compared to other neuroimaging methods) participants were able to explore whilst wearing the electrode cap (see detailed procedure outlined in 6.1.2 *Methods* pp. 147-152).

Furthermore, during the EEG testing process, participants were considerably less restricted compared to such techniques as fMRI that require people to lie down.

6.1.1 Introduction

6.1.1.1 Rationale

In designing the EEG experimentation for this project I drew on existing studies (Silas, 2009; Silas et al, 2012; Silas et al, 2010; Oberman et al., 2007; Muthukaraswamy et al., 2004) that investigate oscillations of an EEG rhythm commonly known as the ‘Mu frequency’. These oscillations are perturbed during movement processing and are said to be an index of mirror neuron system (MNS) activation. Changes in the power at the Mu frequency (~8 -13 Hz) are thought to reflect recruitment of motor processes in the brain (Oberman et al., 2005) as the Mu rhythm is observed to be of a greater power when measured on the scalp during rest and of a smaller power during movement. (Dickter & Kieffaber, 2014). The term ‘power’ refers to the measurement of the ‘height’ (amplitude) of the waveform squared, over a given period of time. During Mu suppression the summation (which happens as it is measured on the participant’s scalp) of asynchronous neural processing results in a lower power compared to synchronous firing. Therefore, a decrease in power at the Mu frequency is thought to reflect an underlying desynchronisation of neuronal firing in cortical motor areas which, in turn, is associated with increased neuronal processing.



Gestaut, H.J. & Bert, J. (1954). EEG Changes during cinematographic presentation (Moving picture activation of the EEG). *EEG Clinical Neurophysiology*, 6, 433-444.

Figure 27: Mu Wave Suppression marked at B

Given a common or similar pattern of modulation during movement performance and observation many have linked Mu frequency measures to the matching mechanism of the

mirror neuron system (Oberman, Pineda & Ramachandran, 2007; Bernier, Dawson, Webb & Murias, 2007). Mu rhythm recorded on the surface of the scalp, is not generally considered a direct measure of mirror neuron activity (Hobson & Bishop, 2016; Fox et al, 2015), because it does not reflect cortical activation of areas considered to contain mirror neurons (for example, the inferior frontal cortex and the superior parietal lobe). However, some authors suggest that the activity in MN areas respond to movement performance and observation; it is activity in these neurons that has a knock-on (downstream) effect on somatosensory activity – where Mu is generated (Fox et al, 2015; Muthukumaraswamy et al, 2004; Oberman et al, 2007; Pineda & Ramachandran, 2007; Silas et al., 2012). More recent studies argue that indexing the human MNS via Mu suppression is an unreliable method as the observed desynchronization may be due to the overlap between Mu and alpha frequency bands (Hobson & Bishop, 2016). As the alpha frequency band is involved in attentional fluctuations, it has been argued that observed Mu desynchronization may be driven by participants' attentional engagement (Hobson & Bishop, 2016). In order to account for visual or attentional influences caused by the topographical overlap of Mu frequency and the posterior alpha band, some studies compare observations at central regions to those of the occipital cortices (Silas et al, 2012). This allows for the dissociation of visual attentional effects, caused by posterior alpha, from motoric mirroring effects indexed by somatosensory Mu changes.

Many researchers have linked mirroring mechanisms to some components of empathic processing and intersubjective understanding (Jola, 2012; Silas et al., 2012; Rizzolatti & Sinigaglia, 2006; Gallese, 2003) particularly where goal-directed actions involved in imitation are concerned (Dickter & Kieffaber, 2014). To this end, it has been found that Mu suppression is more pronounced during intentional object-related actions as opposed to abstract movements (Muthukumaraswamy et al, 2004). Proponents of simulation theory posit that for mirror neurons to be activated there needs to be an intentional interaction between the participant and their perceived object (Gallese, 2003). This view further considers mirror neurons as an 'implicit action understanding' mechanism (Gallese, 2003):

(M)irror neurons instantiate a *multimodal* [author's emphasis] representation of organism-organism relations. They map this multi-modal representation across different spaces inhabited by different actors. These spaces are blended within a unified common *intersubjective* space, which paradoxically does not segregate any subject. This space is *we-centric* [author's emphasis]. [...] (T)he self-other identity at the level of the body enables an intersubjective transfer of meaning to occur.

Furthermore, it has been suggested that the human ability to read the intentions and motivations (in addition to the physical actions) of others, provides the cornerstone for key social skills including empathy (Oberman et al, 2007). The link between a ‘mirror matching’ mechanism in the brain and empathic responses has been proposed via an automatic and unconscious ‘internal simulation’ processing of action and emotion (Baird et al, 2011). When one perceives the actions of another a mirror mechanism processes the observed action by internally simulating those actions on the observer’s own motor system. It is via this internal simulation that understanding of the observed other is achieved. If indeed motor mirroring is linked to empathy the most likely candidate is an ‘embodied’, or ‘kinaesthetic’, empathy as this is fundamentally a non-abstract ‘lived’ and affective relational experience.

There have been a few investigations seeking to explore whether indeed there is a link between mirror neuron activation and empathy. Kaplan and Iacoboni (2007) tested the right inferior frontal mirror neuron area for grasping through fMRI. The authors found different responses based on different intentions; for example drinking or cleaning (Kaplan & Iacoboni, 2007). The higher activity observed for precision grip in the drinking context was correlated with the Empathic Concern Subscale. The authors concluded that context and intentions play a role in predicting the actions of others, which was further linked to social competence (Kaplan & Iacoboni, 2007). In their fMRI study Gazolla et al (2006) examined brain areas that respond both during motor execution and when participants listened to the sound of an action. They found that the left hemispheric temporo-parieto-premotor circuit was activated thus providing evidence for a ‘human auditory mirror neuron system’ (Gazolla et al, 2006). Gazolla et al (2006) demonstrated that individuals who scored higher on an empathy scale activated the auditory MNS more strongly, further adding to the link between mirror neuron activation and empathy.

EEG studies have also built on the growing evidence in support of the empathic relevance of MNS activation. In a recent EEG study, participants viewed happy and disgusted face photos accompanied with empathy and non-empathy task instructions (Moore, Gorodnitsky & Pineda, 2012). The authors found significant differences between responses to happy and disgusted faces across the right hemisphere (Moore, Gorodnitsky & Pineda, 2012). Yang et al (2009) examined whether Mu rhythm was a reliable indicator of sensorimotor resonance during the perception of pain in others. Even though the researchers found that

both male and female participants exhibited sensorimotor activation related to empathic response in pain perception, women showed stronger Mu suppressions than men (Yang et al, 2009). The results were further correlated with a distress subscale further suggesting that Mu rhythm can be a potential biomarker of empathic mimicry (Yang et al, 2009).

Imitation ability has also been investigated in relation to an action execution matching system indexed by the desynchronization of the Mu EEG frequency (~8-13 Hz) during movement observation (Bernier et al, 2007). Some studies have observed both reduced empathy and imitation in Autistic Spectrum Disorder (ASD) (Bernier et al, 2007; Oberman et al, 2005). These theories put forth the idea that this is because a common neural substrate is not functioning typically in ASD, a Mirror Neuron System. Oberman et al (2005) investigated the level of dysfunction in an observation/execution system in adults with autism spectrum disorder, through EEG. They found that individuals with autism exhibited significant Mu suppressions to self-performed hand movements but not to observed hand movements (Oberman et al, 2005). Bernier et al, (2007) also examined differentiations in Mu attenuations during observation, execution and imitation of movements in a group of adults with an autism spectrum disorder and a group of typical adults. The investigators compared their EEG findings with behaviourally assessed imitation abilities in their participants (Bernier et al, 2007). The authors concluded that an execution/observation matching system dysfunction was evidenced in participants with autism, which was further related to their degree of impairment in their imitation abilities (Bernier et al, 2007). Others argue that equating empathy with motor resonance is problematic because the latter “does not convey insight into another’s internal state and does not account for any other-oriented motivational state that characterises sympathy” (Decety & Michalska 2010, p.886). Investigating empathy at a neuronal level is by no means a straightforward process.

Even though the reliability of EEG in the study of MNS activation, as indexed by Mu suppression during movement processing, remains inconclusive (Hobson & Bishop, 2016), the link between motoric processing and empathic response has been evidenced by recent Transcranial Magnetic Stimulation (TMS) (Jola et al, 2012; Jola et al, 2011) and fMRI (Calvo-Merino et al, 2008; 2006; 2005) studies. Specifically relevant to this research project of kinaesthetic empathy, is the growing empirical evidence of increased action observation in premotor and parietal brain regions in people with motoric expertise, such as dance and capoeira artists (Calvo-Merino et al, 2006; 2005). Calvo-Merino et al’s (2005; 2006) research has demonstrated that we do not only understand movement through visual recognition but

most importantly, we resonate with movement at a motoric level. Expert movers (capoeira and ballet dancers) showed greater motoric resonance when they observed actions they had experience in as opposed to actions performed in a different technical style (Calvo Merino et al, 2005 ; 2006). Building on evidence that links embodied expertise to higher motoric resonance at a neuronal level, others have argued that visual experience, acquired through repeated (visual) exposure, can also modify motoric simulation processes as “a ‘personal’ physical knowledge can be acquired indirectly, by visual experience” (Jola et al, 2012, p.9). Jola et al (2011; 2012) have further demonstrated that motor simulation, involved in spectators’ kinaesthetic experience, is modified not only by visual expertise but also by the spectator’s empathic abilities. Jola et al’s interdisciplinary paradigm, combining neuroscientific and qualitative findings, calls for a “higher ecological validity” (Jola et al, 2012, p. 2) in the investigation of embodied experience. To this end Jola et al’s (2012) audience research into kinaesthetic empathy is situated within live performance conditions in order to capture “spectators’ experience” (p. 2) as opposed to using goal-oriented (i.e. grasping) tasks or highly controlled video stimuli as typically used in traditional cognitive neuroscience experiments.

The role of motoric familiarity in embodied processing was directly investigated in this study. Participants engaged in a four-week embodied practice programme exploring Laban Movement Analysis (LMA) and mirroring approaches (among others) as utilised in Dance Movement Psychotherapy. As part of the EEG design the LMA and mirroring approaches (used during the intervention) were also introduced as experimental conditions during the EEG testing, which was completed twice, before and after the intervention. Therefore, motoric familiarity is relevant in this study both in terms of motoric expertise and in relation to participants’ familiarity with the testing process. EEG measurements were used to record Mu frequency oscillations over the motor cortex, as an indication of embodied (kinaesthetic) empathic responses, before and after an intervention, which engaged in specific Embodied Practice, took place. EEG was recorded from each research participant before and after the intervention, during live embodied interactions with another person (research assistant or primary investigator).

In this study embodied experience was determined on the basis of training and professional orientation: (i) research participants with prior specialised training in the moving body (dance and dance movement therapy) who applied this professionally in their practice (Studio Lab group) and (ii) research participants with limited or no training in embodied

practice (NHS Lab group) and which did not form part of their professional approach. This distinction between the research participant groups follows Jola et al's (2012; 2011) example of audience research on kinaesthetic empathy, where they investigate 'expert' audience members' kinaesthetic responses (experienced viewers in either ballet or Indian dance) compared to those of 'non-expert' spectators. Further elaboration on the overall methodological design of Fieldwork Stage 1 may be found in Chapter 4 (Interdisciplinary Methods, pp. 58-83).

As part of the statistical analysis of the EEG measurements four factors were explored: 1. Timing (before and after), 2. Group (NHS Lab and Studio Lab), 3. Movement (time, weight, space, flow, mirroring) and 4. Action (observation, performance, imitation and dialogic processing). As the use of EEG is of an exploratory nature in this investigation of kinaesthetic empathy, the overall aim was to examine Mu suppression differences within/between groups based on experience and motoric processing over time rather than gender and/or 'handedness' variations.

6.1.1.2 Hypotheses

The investigation of sensorimotor cortex recruitment is seen as relevant given the above reviewed evidence linking such activation to recruitment of an MNS. Indeed, as we have seen, such a system links embodied motor processing to aspects of action understanding, empathy and intersubjectivity. The following hypotheses allow for an investigation of motor recruitment during action processing. The experimental paradigm outlined aims to test the degree of MNS recruitment during different movement conditions and test a change, among two different groups, after movement intervention therapy.

It was predicted that participants' embodied experience, cultivated during the intervention (4-session programme), would have a direct impact on their overall processing of movement (indexed by Mu suppression) when measured after the intervention. This hypothesis is aligned with research into dancers' expertise in movement-related tasks including movement exploration and perception as Blasing et al (2012) explain "(p)erforming and perceiving dance epitomize embodied cognitive processes including those based on somatosensation, learning, memory, multimodal imagery, visual and motor perception, and motor simulation" (p. 306). Therefore, greater sensorimotor cortex activation after completion of the movement intervention across conditions was predicted for both groups.

Specifically, a greater decrease in Mu frequency was expected during the final EEG recording, after the intervention, for both the Studio Lab and NHS Lab groups.

Mirror neuron experimentation has consistently found greater activation of the mirror neuron system during imitation (e.g. Bernier et al, 2007). Therefore, it was predicted that when participants were engaged in imitation greater sensorimotor activation would be observed irrespective of when the recording was made and irrespective of the group the participant was in.

In this study the two participant groups were differentiated on the basis of embodied experience. The Studio Lab represented the ‘experienced’ (or ‘trained-movers’) group on the basis that all participants in this group had received specialist training in embodied approaches (through dance movement psychotherapy and dance training). The NHS Lab group represented the ‘non-experienced’ (or non-trained movers) group as participants had not received specialist training in embodied approaches. Consistent with studies investigating group differences (e.g. Jola et al, 2012; Calvo-Merino et al, 2006), it was anticipated that the ‘trained mover’ group (Studio Lab participants) would show greater sensorimotor activation, overall, compared to the ‘non-trained mover’ group (NHS Lab participants) as mirror system activity depends not only on the visual knowledge of what is observed but also on possessing the motor representation for an observed action (Calvo-Merino et al, 2006).

Finally, it was hypothesised that the ‘non-trained movers’ (NHS Lab participants) would show a greater change in sensorimotor activation after the intervention compared to ‘trained movers’ (Studio Lab participants) due to gaining a more significant learning experience during the intervention. As there are no previous studies investigating DMP interventions within an EEG experimental design the embodiment conditions (time, weight, space, flow and mirroring) were included in the study for an exploratory analysis. This investigation will allow me to understand better the degree to which motor simulation is used in dance movement psychotherapy interventions and how different movements recruit the motor system differently during movement processing.

6.1.2 Methods

6.1.2.1 Participants

Of the thirteen healthy adult research volunteers recruited in *Fieldwork Stage 1*, eleven consented to participate in the EEG testing (see recruitment and ethical considerations in Chapter 4: Interdisciplinary Methods pp. 58-83). Research participants were grouped as follows: (i) NHS Lab (N=7) as the ‘non-experienced mover’ group formed by multidisciplinary clinicians practicing within a specialist NHS perinatal mental health service and (ii) Studio Lab (N=6) as the ‘experienced-mover’ group formed by a combination of dance movement psychotherapists and dance practitioners. Both groups had an equal sex distribution. To safeguard against a potential conflict of interest in my relationship with research participants, due to my overlapping roles as experimenter, researcher and clinician in this study, no demographic information was collected during the fieldwork. This unusual approach, considering experimental conventions in cognitive neuroscience, was implemented in line with my interdisciplinary methodology specifically addressing participants’ ethical considerations during the recruitment procedure of the EEG study.

Three research assistants (all studying at the University of Roehampton at the time) were recruited for the study (contributing to Studio Lab EEG only due to logistical limitations). Research assistants were briefed on the project rationale and design (see Appendices 6, 7, 8 and 22) and participated in relevant practical training (prior to their involvement in the research study) in order to familiarise themselves with the experimental conditions. The research assistants’ remit within the EEG sessions was in support of the interactive experimental tasks set out for the research participants.

6.1.2.2 Estimating power of the sample

Prior to conducting the study and in order to calculate the achieved power of the sample for this study the software G*Power v.3.1.9.2 was used. For an effect size of 0.5, a level of significance of 0.05 and the sample size of 11 subjects the achieved power was 83.6%, thus resulting in a type II error rate of 16.6% which is very well within the acceptable levels. This calculation was based on between and within subject comparisons found in Silas et al (2012).

6.1.2.3 Data acquisition

The sensor net (Electrical Geodesics, Inc or EGI) consisted of 128 electrodes each seated in a soft sponge. An Electrical Geodesic Inc. amplifier was used with Ag/AgCl

electrodes sampled at 1000Hz with a 0.1 to 100Hz online analogue bandpass filter. A Cz reference was used online and data were collected on a Macintosh MacBook Pro computer. All electrode impedances were kept below 50 k Ω ; an acceptable level for this system. After all electrodes were placed and impedances checked, the experiment took place.

6.1.2.4 Procedure

Research participants were seated in a comfortable chair opposite a research assistant in the case of the Studio Lab group, or in the case of the NHS Lab group, the experimenter. This potential confound caused by the different observed individual between the two groups will be further addressed in the discussion section of findings.



Figure 28: NHS Lab participant during EEG session

EEG recordings were carried out during five conditions; rest (baseline measure), movement observation, performance, imitation and dialogic processing. For each experimental condition the research participant explored five embodiment conditions; the four effort qualities (deriving from Laban Movement Analysis) of ‘time’, ‘flow’, ‘weight’ and ‘space’ and the additional condition of ‘mirroring’. This resulted in a total of 20 experimental conditions and one baseline session. For instance, during recording of the ‘time’ DMP condition research participants were asked to explore improvised arm and hand movements in relation to a research assistant seating opposite them (or the experimenter in the case of the NHS Lab group) as follows:

- (i) *Observe time*: the research participant observed the research assistant perform sudden and sustained arm movements during a live improvised exploration of the time effort quality.

- (ii) *Perform time*: the research participant performed sudden and sustained improvised arm/hand movement as an exploration of the time effort quality.
- (iii) *Imitate time*: the research participant imitated the research assistant during an improvised arm/hand movement exploration of sudden and sustained time effort.
- (iv) *Dialogic exploration of time*: the research participant dialogically explored sudden and sustained arm/hand movement improvisation through reciprocal interaction with a research assistant.

In addition to the above instructions, participants were asked to avoid moving their head, face and shoulders and to limit their hand and arm movements to a close kinesphere in front of their body. The experiment was repeated for the effort qualities of ‘weight’ (exploring strong and light effort), ‘flow’ (exploring free and bound effort) and ‘space’ (exploring direct and indirect effort). ‘Mirroring’ was also explored through performance (research participant leading the mirroring exploration with research assistant following), observation (research participant observing two research assistants mirror each other), imitation (research participant followed research assistant) and dialogic processing (free reciprocal improvisation between research participant and assistant). Due to resource restrictions (timetabling and location) resulting in no research assistant input during the NHS Lab fieldwork the experimental condition of ‘Mirroring Observation’ was omitted for this participant group (See Appendices 6 and 7, pp. 15-17, for a comprehensive outline of the experimental design). Each experimental condition was recorded for 40 seconds. The order of tasks was random for each participant to account for order effects. A baseline recording (also recorded for 40 seconds) for each participant was acquired at rest twice at the beginning of the experiment. Participants were requested to stare at a blank wall during the ‘eyes open’ trial and then repeat the baseline recording with ‘eyes closed’.

For the Studio Lab, EEG testing took place within the Cognitive Lab of the Department of Psychology at the University of Roehampton. For the NHS Lab, the EEG equipment was transferred to City and Hackney Centre for Mental Health, within the East London NHS Foundation Trust, where experimental sessions took place in designated meeting rooms or office spaces. Every effort was made to replicate optimal testing conditions according to laboratory protocol. For example, attention was given to the room temperature and noise levels during the testing session. Electrical equipment that could cause potential

interference with the recording process were also deactivated or removed from the testing room.

6.1.2.5 Pre-processing

Recorded EEG waveforms were processed using the BESA (Brain Electrical Source Analysis) software (version 5.2.2). The recorded data were re-referenced to the common average and filtered between 0.1 Hz and 50 Hz and the continuous waveform was segmented into 1024 ms epochs. Next, a visual inspection of the waveform was conducted. Where excessive amplitudes (e.g. $\pm 250 \mu\text{V}$) on individual data segments or electrode channels were observed a ‘cleaning’ procedure was followed as part of the sample quality control. Specifically, when electrode channels displayed excessive ‘noise’ levels they were rejected and excluded from subsequent analysis, except in the presence of surrounding artefact-free electrode channels which allowed for interpolation. The segmented data were also checked for artefacts, such as blinks, for which an automated BESA algorithm was used. Data segments displaying excessive voltages (e.g. $\pm 60\mu\text{V}$) were rejected by the algorithm. Where a recording of a condition exhibited fewer than 50% accepted trials, this was rejected. Subsequently, Fast Fourier Transforms (FFTs) were performed to calculate the Mu (~8-13) power values for each recorded condition for each electrode. FFTs were performed on each clean segment of EEG data and then averaged separately for each experimental condition.

In the experiment EEG was recorded from all 128 electrodes, however only data recorded from electrodes over the motor and occipital cortices were analysed as part of the study. The image below shows the two clusters of electrodes measured over the motor cortex, of interest in this study, specifically marked at C3 and C4. Adopted from Umiltà et al’s (2012) paradigm (see Fig. 29 below) also marked are electrodes O1 and O2, occipital electrodes, which also informed the statistical analysis of the EEG recordings.

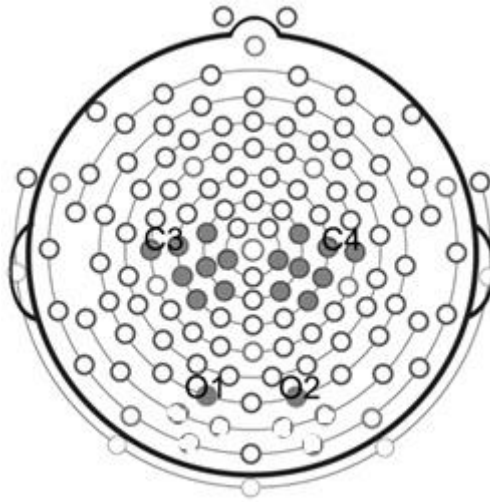


Figure 29: Clusters of Electrodes used in the EEG analysis

Of the 128 electrodes, Mu power (8-13 Hz) values for the following electrode clusters were averaged as an approximation to C3 and C4, after Muthukumaraswamy et al (2004): electrodes 41, 36, 30, 42, 37, 31, 54, 53 (for C3) and electrodes 80, 87, 93, 105, 104, 103, 79, 86 (for C4). Occipital electrodes (70 and 83) were also examined to ensure the pattern of activation observed at central locations was not the same as that observed at occipital electrodes. Specifically, testing the occipital electrodes aimed to assure that the observed suppression was specific to the Mu rhythm and not the result of visual or attentional confounds (Bernier et al, 2007). The baseline measure for each participant was averaged between the ‘eyes open’ and ‘eyes closed’ values. A ratio value of each condition was then computed (Condition/Baseline) and subsequently log transformed (Log10). This resulted in normal Mu power distributions relative to baseline. Specifically, log transforms with negative values indicated a decrease in power measured at the Mu frequency relative to the baseline, positive values indicated an increase in power measured at Mu frequency relative to the baseline and a zero value indicated no change in power measured at the Mu frequency relative to the baseline as seen below (Fig 30).

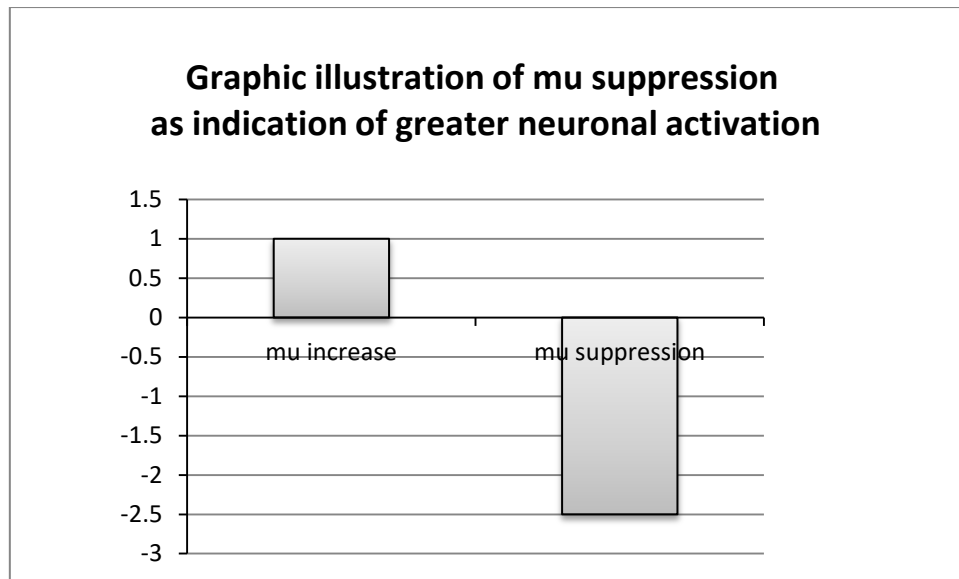


Figure 30: Graphic Illustration of Mu Suppression with 0 indicating no change from the baseline measure, plus value indexing a decreased activation and minus value representing increased activation

6.1.3 Statistical Analysis

6.1.3.1 Data organisation.

The IBM SPSS statistics software (version 22) was used for all statistical analyses. Given that laterality effects are not investigated in this study, data were collapsed across C3 and C4.

6.1.3.2 Missing data

A challenge for both groups involved the amount of movement participants were allowed to explore. Despite the instructions given regarding acceptable movement range for the experimental conditions, participants' spontaneous (inter)actions proved challenging to manage during the live movement improvisation. As a result, several recordings were rejected during the pre-processing stage due to the presence of excessive artefacts (noise levels caused by muscular movement) within the EEG waveform, and resulting in an insufficient number of trials with non-artefact contaminated data.

There were 35 missing data points out of the total 198. Approximately 82% of the sample was acceptable for analysis. Missing data points represent variables with no recordings for either the movement or action conditions as shown below (Fig. 31). The light grey area represents acceptable data points, whereas the dark shading represents the rejected data points.

Variables	Missing Data
Mirroring Before	3
Mirroring After	6
Flow Before	0
Flow After	1
Space Before	0
Time Before	0
Weight Before	1
Space After	2
Time After	2
Weight After	0
Imitation Before	1
Imitation After	4
Observation Before	0
Observation After	0
Dialogic Before	2
Dialogic After	5
Performance Before	2
Performance After	6

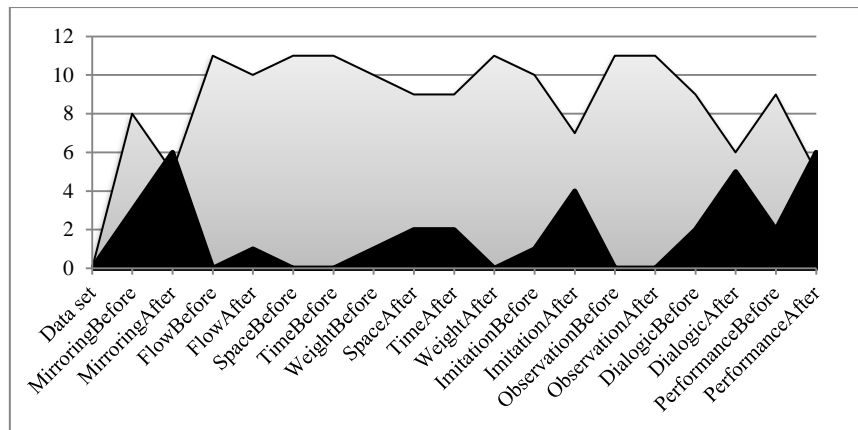


Figure 31: Number of Missing Data listed in table format (left) and represented diagrammatically by the dark shaded area of the graph (right).

6.1.3.3 Testing normality for Movement and Action conditions before and after

The remaining data were tested with respect to the assumptions of Normal Distribution. Examination of the skewness (+1/-1) and kurtosis (+2/-2) of the data distribution showed that all variables were within the acceptable range, with the exception of the following three variables: Mirroring After (skewness = -.46, kurtosis = -2.54), Dialogic After (skewness = -.37, kurtosis = -2.13) and Performance After (skewness = -.52, kurtosis = -2.44). As the majority of variables were found to be normally distributed the data set is treated as normally distributed overall. Furthermore, given that ANOVA is a robust statistical technique small variation with regard to assumptions of normality should be tolerated by the statistical approach.

6.1.4 Results

6.1.4.1 Mu suppression across time: Movement

The considerable amount of missing data complicated the analysis due to the repeated measures design. In order to increase the number of accepted participants in the initial exploration of data a 5 X 2 within-subjects ANOVA was carried out to compare the mu suppression values across five experimental movement conditions (weight, space, time, flow and mirroring) at two time points, described as the timing condition, (before and after the embodied practice intervention). The action (observation, imitation, performance and dialogic processing) and group (Studio/NHS) factors were collapsed for this analysis. This test yielded a near significant main effect of *timing* $F(1,4) = 7.23$, $p = .055$ ($\eta_p^2 = .64$). No further significant main or interaction effects were observed: all F 's < 2.18 , all p 's $> .12$. The main effect of timing revealed that there was significantly greater mu desynchronisation *after* the intervention ($M = -.26$, $SD = .39$) than before the intervention ($M = -.06$, $SD = .37$) as shown in the graph below (Fig.32).

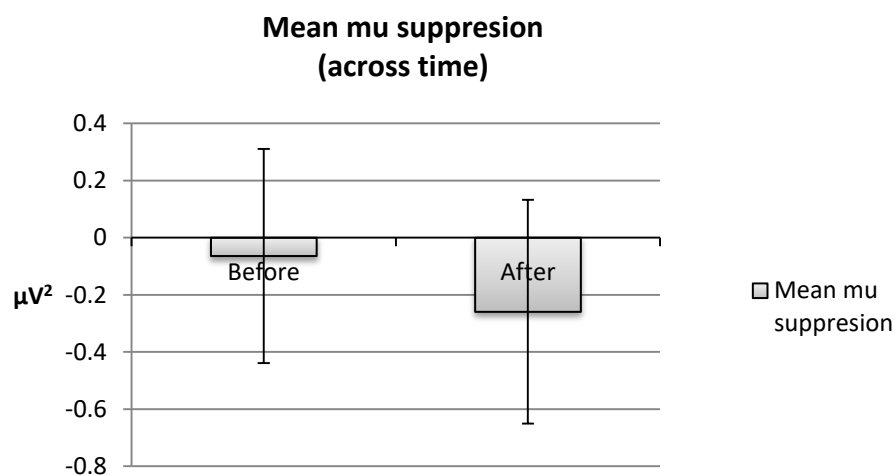


Figure 32: Significant overall mean Mu suppression after the intervention

A 5 X 2 within-subjects ANOVA using movement condition variables (weight, space, time, flow and mirroring) calculated from two occipital electrodes (70 and 83) before and after the intervention, was run to see if the results are similar to those of the motor cortical areas. Similar to the ANOVA carried out for central locations the action (imitation, observation, performance and dialogic processing) and group (Studio/NHS) factors were collapsed for this test. The test yielded a close to significant main effect of *timing*: $F(1,3) = 8.41$, $p = .06$ ($\eta_p^2 = .74$). No other main or interaction effects were noted all F 's < 1.32 all p 's $> .32$. To further explore how the main effect of timing was driven by the occipital and central locations a further 2 x 2 (timing x location) repeated measures ANOVA was carried

out. This test yielded a significant main effect of *timing* $F(1,3) = 15.32, p = .03$ ($\eta_p^2 = .84$) and of *location* $F(1,3) = 19.60, p < .001$ ($\eta_p^2 = .99$) showing that mu desynchronization was significantly greater after the intervention at central ($M = -.62, SD = .32$) and occipital ($M = -1.0, SD = .18$) regions compared to before (central regions: $M = -.42, SD = .23$ and occipital regions: $M = -.73, SD = .36$). No interaction effect between timing and location was observed $F(1,3) = .18, p = .70$. A possible interpretation of these results is that the observed main effect of timing found in the first ANOVA could be due to occipital alpha propagating forward, as a similar result was found at occipital electrodes. However, the second ANOVA (with location) justifies examining the electrodes separately as they differ under the main effect of location.

6.1.4.2 Mu suppression across time: Action

A 4 X 2 within-subjects ANOVA was carried out to compare the mu suppression values across four action conditions (observation, imitation, performance and dialogic processing) before and after the intervention (timing). The movement (time, weight, space, flow and mirroring) and group (Studio/NHS) factors were collapsed for this test. The analysis yielded a near significant main effect of *action* $F(3,12) = 3.32, p = .057$ ($\eta_p^2 = .45$). No further significant main or interaction effects were observed all F 's < 5.48 , all p 's > 0.80 . To further explore the mean differences across the action conditions I collapsed across timing and conducted paired-sampled T-tests. This post-hoc analysis was conducted for exploratory reasons. Due to the small sample size no correction was applied for the multiple post-hoc tests. These tests showed that there were no significant variations of mu suppression between the action conditions (observation, imitation, performance and dialogic processing).

The same ANOVA carried out for the occipital electrodes showed no significant main or interaction effects all F 's < 1.35 all p 's $> .32$.

6.1.4.3 Mu suppression: Group differences across time

In order to explore overall group differences a 2 X 2 between-subjects repeated measures ANOVA was carried out to compare mu suppression values between the two participant groups (NHS Lab and Studio Lab) at both time points (before and after the intervention). For the purposes of this analysis the movement (time, weight, space, flow and mirroring) and action (imitation, observation, performance and dialogic processing) factors

were collapsed. There was a significant effect of *timing* $F(1,9) = 9.69, p = .01$ ($\eta_p^2 = .52$). There was no main effect of group: $F(1,9) = .17, p = .69$. No interaction was found between timing and group, $F(1,9) = 2.58, p = .14$.

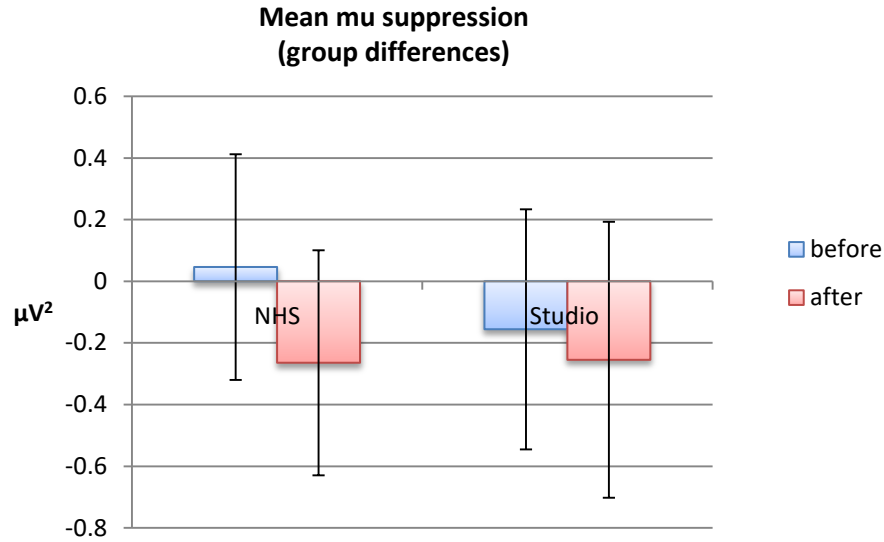


Figure 33: Significant mean Mu suppression group differences after the intervention

The same ANOVA was carried out for the two occipital electrodes (70 and 83) to account for differences between central motor areas and the occipital cortex. No main or interaction effects were noted: all F 's < 5.33 all p 's $> .14$.

6.1.4.4 Mu suppression: Group differences during the movement conditions

Because a decrease in power at the mu frequency was consistently shown to be greater after the movement intervention, I tested for differences before and after the intervention separately by running two identical ANOVAs for data from before and after the intervention.

- **Before**

To test for group (Studio Lab and NHS Lab) differences during the five movement conditions (time, weight, space, flow and mirroring) before the intervention a 5x2 repeated measures ANOVA was carried out, collapsing across the action (imitation, observation, performance and dialogic processing) and timing (after) factors. This test showed a significant *interaction between movement and group*: $F(4,24) = 2.91, p = .04$ ($\eta_p^2 = .33$). No

significant main effect of movement $F(4, 24) = 1.96, p = .13$ or group $F(1, 6) = 1.6, p = .25$ was observed.

To further explore for differences between the two groups across the five movement conditions before the intervention paired samples T-tests were carried out. For the NHS Lab group a significant difference in power at the mu frequency between ‘flow’ ($M = 0.13, SD = 0.35$) and ‘time’ ($M = -0.13, SD = 0.39$), $t(4) = 4.43, p = .01$ was observed. There was a significant difference in power at the mu frequency between ‘space’ ($M = 0.07, SD = 0.42$) and ‘weight’ ($M = -0.05, SD = 0.35$), $t(3) = 3.3, p = .05$.

For the Studio Lab group there was a difference in power at the mu frequency in the following pairs of movement conditions: (i) ‘mirroring’ ($M = -0.09, SD = 0.41$) and ‘flow’ ($M = -0.35, SD = 0.36$), $t(4) = 3.3, p = .03$, (ii) ‘mirroring’ ($M = -0.09, SD = 0.41$) and ‘space’ ($M = -0.35, SD = 0.32$), $t(4) = 2.8, p = .05$, (iii) ‘mirroring’ ($M = -0.09, SD = 0.41$) and ‘weight’ ($M = -0.26, SD = 0.35$), $t(4) = 3.9, p = .02$, (iv) ‘flow’ ($M = -0.28, SD = 0.37$) and ‘time’ ($M = 0.06, SD = 0.58$), $t(5) = -3.06, p = .03$ and (v) ‘space’ ($M = -0.24, SD = 0.39$) and ‘time’ ($M = 0.06, SD = 0.58$), $t(5) = -2.10, p = .03$.

These results are illustrated in the two tables below (Fig 34 and 35).

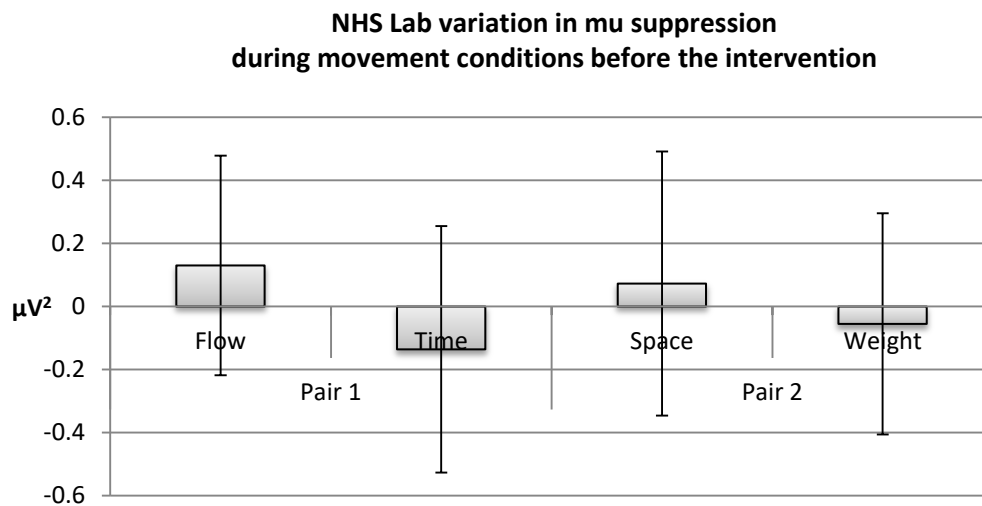


Figure 34: Significant Mu suppression variation within movement conditions before – NHS Lab

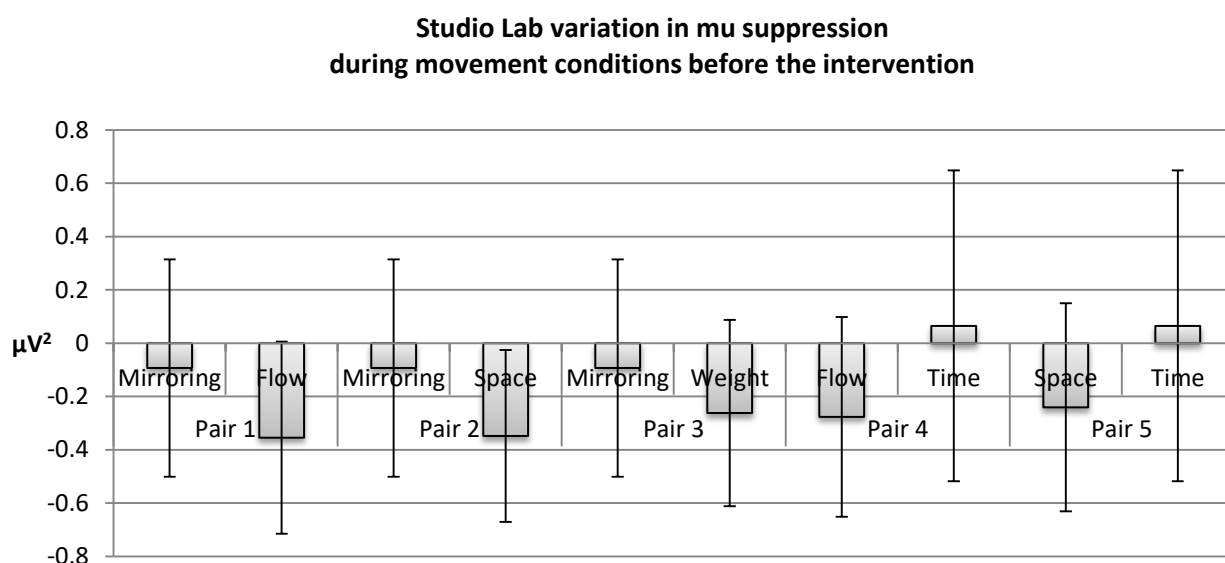


Figure 35: Significant Mu suppression variation within movement conditions (before) – Studio Lab

Power changes at the mu frequency were shown to differ between movement conditions more often in the studio lab compared to the NHS group before the intervention took place.

- **After**

To test for group (Studio Lab and NHS Lab) differences during the five movement conditions (time, weight, space, flow and mirroring) after the intervention a 5x2 repeated measures ANOVA was carried out collapsing across the action (imitation, observation, performance and dialogic processing) and timing (before) factors. This test yielded a near significant *main effect of movement* $F(4,12) = 3.10$, $p = .057$ ($\eta_p^2 = .51$). No interaction between movement and group was observed: $F(4,12) = 0.83$, $p = .53$. No main effect of group was observed $F(1,3) = .12$, $p = .75$.

The above 5x2 repeated-measures ANOVAs carried out for the occipital electrodes yielded no main or interaction effects across groups and movement conditions before the intervention all F 's < 1.93 all p 's $> .14$ or after the intervention all F 's < 3.02 all p 's $> .09$.

6.1.4.5 Mu suppression: Group differences during the action conditions

- **Before**

To test for group differences (Studio Lab and NHS Lab) during the four action conditions (imitation, observation, dialogic processing and performance) before the

intervention a 4x2 repeated measures ANOVA was performed collapsing across the movement (time, weight, space, flow and mirroring) and timing (after) factors. This test yielded no main or interaction effects: all F 's < .99 all p 's > .42.

- **After**

The same ANOVA was repeated to test for group differences (Studio Lab and NHS Lab) during the four action conditions after the intervention collapsing across the movement and timing (before) factors. No significant main or interaction effects were observed all F 's < 2.51 all p 's > .12.

The same 4x2 repeated-measures ANOVAs carried out for the occipital electrodes yielded no main or interaction effects across groups and action conditions before the intervention all F 's < 1.43 all p 's > .26 or after the intervention all F 's < 1.05 all p 's > .44.

6.1.5 Discussion

From the results outlined above three broad findings can be reported. First, Mu suppression increased over time. Second, before the intervention there were a high number of differences in movement conditions for the Studio Lab participants; but fewer differences were observed between movement conditions for NHS Lab participants. Importantly, no differences between movement conditions were observed between the two groups after the intervention. Finally, different patterns of decreases in the power at the mu frequency, relative to baseline, were observed between central and occipital locations for the majority of the tests carried out. These findings are discussed briefly below within the context of the current literature, alongside experimental limitations. A broader interdisciplinary discussion of the entire collection of the research findings is developed in Chapter 8 (pp.193-218).

6.1.5.1 Increased Motor Cortical Activation over time

The most consistent finding emerging from the analysis was the significant effect of timing after the intervention. Overall, irrespective of which group participants were in, motor cortical activation increased after the movement intervention. However, it is important to note that any interpretations made regarding the intervention are limited due to the absence of control group comparisons, i.e. there was no group that didn't go through any training. It

follows then that a possible explanation of the finding is that after time μ decrease in power increases. I am therefore unable to conclude that any observed change is due to the intervention and not just time passing. Nevertheless, existing empirical evidence points to two other possible and non-mutually exclusive explanations for the reported finding of an increase in μ suppression after the intervention.

First, one might consider that irrespective of prior expertise, participants' motoric resonance increased after the intervention through their acquired (embodied) experience (training) in this study. In other words, participants' motoric experience (training) of the LMA and mirroring conditions, practiced during the Embodied Practice programme, may have resulted in the observed increase in μ suppression. A few studies have demonstrated that those who are physically trained in the same specialised motoric actions they are observing, i.e. dance (Calvo-Merino et al, 2006; 2005; Blasing et al, 2012) and elite basketball (Aglioti et al, 2008), but also through a cultural context of familiarity (i.e. with specialised hand gestures) (Liew et al, 2010), exhibit higher brain activation in areas involved in action understanding. These studies propose that motoric expertise is involved in increased simulation processes during movement processing. It is likely then than participants' acquired motoric familiarity with the movement conditions explored in this investigation, increased their embodied resonance with these actions over time.

A second plausible explanation is that, an increase in visual familiarity with the observed and performed movement 'repertoire' during the EEG experimentation resulted in greater sensorimotor activation over time. Research into the role of visual experience in motor resonance during movement processing (Jastorff et al, 2009; Petrosini et al, 2003; Cross et al, 2009, Mattar & Gribble, 2005) suggests that it is possible to acquire new motor skills through observation. Furthermore, Jola et al (2012) investigated visual experience, through repeated visual exposure, excluding physical practice or learning. The authors suggest that it is possible to "modify motor-related simulation processes at the neuronal level" (Jola et al, 2012, p.2) through visual experience alone. During the Embodied Practice programme, participants observed others embody the LMA and mirroring conditions employed in the EEG experimentation. Therefore, participants' practice did not only involve physical experience but also visual observation. It may be suggested, that participants' visual familiarity with the movement conditions, utilised during the EEG, may have influenced the observed increased μ suppression after the intervention.

To summarise, after a period of training the neural response, generated by the somatosensory cortex, whilst the participants performed, observed, imitated and dialogically processed movement tasks was greater. Higher Mu suppression post intervention may suggest that participants' acquired physical and visual experience in the study, over time, played a key role in their embodied resonance. As the final EEG testing for each individual took place at different time intervals (i.e. from just a few days post intervention to two weeks after completion of the movement programme) the effect of time reported here is interpreted in the broad chronological sense meaning 'post-intervention'.

The restrictions imposed by the EEG experimental conditions (e.g. limitations in movement and seated posture) provided a new experiential *context* for participants' movement exploration. Studio Lab participants particularly commented on how differently they experienced their embodied improvisations (compared to their usual spontaneous whole body explorations) during the EEG. This embodied relational context imposed by the EEG testing provided a new kinaesthetic experience for both experienced and non-experienced movers. Participants from both groups commented that they felt more relaxed during their final EEG session as they *knew* what to expect. In the context of the findings discussed here, it may be suggested that participants' sense of 'knowing' refers to both their embodied and visual familiarity with the movement conditions and experimental process. However, the role of visual and physical familiarity in participants' movement processing, is necessarily situated within the live relational interactions, during which the EEG testing was conducted. As Jola et al (2012) suggest: "While physical and visual experience can be dissociated to a certain extent, social factors that are inherently intertwined with either physical or visual experiences may interact and impact on motor corticospinal excitability in a complex manner" (p. 2). In this context, participants' social familiarity with their movement partner (research assistant or researcher) over time, may have shaped their embodied relational resonance during interactive movement processing.

6.1.5.2 Group differences in movement processing before the intervention

Studio Lab participants (experienced movers) demonstrated greater embodied resonance at a neuronal level before the intervention, as greater differentiation between movement conditions was observed, compared to the NHS Lab group (non-experienced movers). As part of their professional orientation dance movement psychotherapists and

dance practitioners (Studio Lab group) had received extensive training in embodied practice, including techniques such as LMA, mirroring and improvisation, prior to their involvement in the study. On the other hand, NHS Lab participants, multi-disciplinary clinicians, did not have prior experience in embodied practice or exposure to such sophisticated ways of exploring creative (improvisational) movement. Based on neuroscientific evidence deriving from dance research it has been suggested that physical experience is a prerequisite in motoric resonance at a neuronal level (Calvo-Merino et al, 2006; Jola et al, 2012).

The five movement conditions introduced in the experimental process have not been utilised in previous EEG experimentation examining motor cortex activation. These conditions included the four Laban Movement Analysis Effort categories (Hackney, 2002; Guest, 2005) (i) time, (ii) weight, (iii) space and (iv) flow as well as a (v) mirroring condition (drawing from dance movement psychotherapy). Each of the LMA categories is further subdivided into two polarities, as shown in the table below (Fig. 36). The LMA effort categories capture the potentiality for movement, including its quality and expression in time and space. These movement possibilities are also associated to relevant psychological states as afforded by their kinetic capabilities (Hackney, 2002). For example, Flow is associated with the continuity of movement, which in turn is associated with one's outpouring or containment of feelings. Weight is considered the sensing movement quality and is linked to intentionality or embodying one's sense of self, i.e. asserting one's weight or passively surrendering weight. Time is thought to reflect one's intuition and inner attitude toward time. Finally, Space relates to attention and thus is associated with thinking processes.

Effort	Polarities	
Flow	Free	Bound
Weight	Light	Strong
Time	Sudden	Sustained
Space	Indirect	Direct

Figure 36: Laban Movement Analysis Effort Qualities

The additional movement condition deriving from dance movement psychotherapy asked participants to explore mirroring through echoing another's movement, experience being mirrored by another, dialogically interact with each other and (in the case of the Studio Lab group only) observe two research assistants mirroring each other. Mirroring as practiced

in DMP relates to echoing, resonating and attuning to another's movement (and expression of that movement) as opposed to merely imitating or copying the action.

Before the intervention, it was found that NHS Lab participants differentiated only between effort qualities, as no differentiation between Mirroring and effort qualities was observed. Specifically, non-experienced movers differentiated Time from Flow and Weight from Space. Based on LMA, this suggests that there was differentiation between the 'feeling' and 'timing' and the 'attention' and 'intention' of the processed movement. In contrast, Studio Lab participants exhibited a more nuanced differentiation between Mirroring and effort qualities. Mirroring was differentiated from most effort qualities (Weight, Space and Flow), with the exception of Time. In addition, Time was differentiated from the Flow and Space effort qualities. Through testing for differences between the movement conditions separately for each group, it was found that after the intervention no significant variance in differentiating between movement conditions was observed within the two groups.

No published research exists to date that tests the involvement of the above movement conditions in the suppression of power at the Mu frequency. Therefore, I can only speculate about what drove the group differences in movement processing before the intervention, but not after. A possible interpretation may be that since NHS Lab participants had no prior (physical and visual) experience of the LMA and mirroring conditions, their initial resonance with these actions was limited. In contrast, Studio Lab participants' embodied expertise in these areas resulted in a more sophisticated resonance with movement processing, allowing them to differentiate between most movement conditions. Furthermore, it may be suggested that non-experienced movers' acquired experience into the above movement conditions over time may have resulted in NHS Lab participants' greater embodied resonance post intervention, thus bringing them on an even keel with the experienced-mover group. In their study of 14-16 month old infants van Elk et al (2008) found that infants' own action experience is closely related to how actions of others were perceived. For example, crawling infants exhibited stronger mu desynchronisations during observations of crawling compared to walking videos. Therefore, it may be inferred that non-experienced movers were able to resonate with the different movement conditions once they had acquired a personal experience of such movements.

By instructing participants to attend to the different effort qualities and mirroring conditions during each trial, my aim was to observe Mu rhythm oscillations (relative to

baseline measures) in line with available empirical evidence investigating goal-oriented movement processing (Silas et al, 2012; Muthukumaraswamy et al, 2004). In contrast to traditional EEG paradigms, in this study movement processing was examined through live interpersonal embodied and expressive interaction. It may be argued, that movement improvisation (as implemented in this experiment) is a very abstract goal, as it involves expressive as opposed to functional movement. However, as explained above, for each movement condition participants were asked to explore different effort and mirroring activities by adjusting their embodied improvisation accordingly. Thus, participants' action exploration of the Time effort (sudden and sustained) differed in quality from that of Flow (free and bound) and so on and so forth. It may be argued therefore that participants' embodied adjustments provided the goal-oriented movement context during the experimental investigation of kinaesthetic empathy.

A recent study examined neural decoding of expressive movement from high density EEG using the Laban Movement Analysis Effort approach (Cruz-Garza et al, 2014). In this feasibility study, the authors attempted to decode expressive movement deriving from the Effort qualities of time, weight, space and flow from scalp EEG. They concluded that Laban categorisation from scalp EEG is feasible, as observed during participants' improvised whole body movement. They went on to suggest that EEG contributes valuable information in the examination of expressive qualities of movement. Further investigations regarding differences in the neural processing of functional and expressive movement are also proposed by the authors (Cruz-Garza et al, 2014). The reliability of examining expressive movement conditions in relation to modulations at the Mu frequency is yet to be developed and verified empirically. This study offers a nascent inquiry into expressive relational movement processing drawing from dance movement psychotherapy interventions.

6.1.5.3 Different activation between the occipital and central regions

There are two established generators for a frequency bandwidth around 8-13 Hz (Fox et al, 2016; Hobson & Bishop, 2016). One is somatosensory called the Mu frequency, which I have been interested in measuring in this investigation. The other is commonly known as 'alpha' and is generated by the occipital cortex. Research has shown alpha to be modulated or suppress in response to visual stimuli and/or to attended information in the visual domain (Fox et al, 2016; Hobson & Bishop, 2016). Because of volume conduction it is possible that any

effects observed at central electrode locations are just alpha modulations – of attention or vision – that propagate forward and are detected centrally. Therefore, although not a completely safe and full-proof method, if I test data from occipital electrodes and find these differences (as in Mu suppression) it would be concerning. But if these differences are not found it is unlikely that they are a result of attentional or visual differences causing a change in alpha suppression.

The same analysis was carried out using data from electrodes over central cortical regions that was conducted for data from electrodes over occipital brain areas. Most statistical tests carried out showed different activation between motor and occipital areas. During the statistical examination of movement conditions a similar activation was observed in both motor and occipital regions. Further investigation of the two cortical locations before and after the intervention found that there was no interaction between the Mu suppression observed at the two different regions. This type of testing is in line with existing EEG experimental designs (Silas et al, 2012), which examine differences between central and occipital regions to account for potential confounds driven by attentional or visual input within the overlapping visual and motor regions of the brain. The different activation reported between the two regions suggests that the significant Mu suppression observed at central locations is driven by heightened sensorimotor activation, as opposed to visual or attentional interference.

Two recent studies (Fox et al, 2016; Hobson & Bishop, 2016) examined the validity of using EEG Mu rhythm modulations as an index for mirror neuron system activation with conflicting results. Whereas Fox et al (2016) concluded that Mu suppression offers a valid means for examining the human MNS, Hobson and Bishop (2016) claim that reliability of Mu suppression is weak and easily confounded with alpha suppression. Hobson and Bishop (2016) also state that most studies do not examine whether the same modulation measured over central brain regions is seen over occipital ones and recommend doing so in future studies. Both studies caution about the vast variability of baseline and analyses procedures used in different research designs. My EEG study followed Oberman et al's (2005) paradigm of recording Mu during long periods of movement processing, during a baseline condition and during four experimental conditions (observation, performance, imitation and dialogic processing). Also following Oberman et al's (2007) analyses procedures the initial and last 10 seconds of each recording were eliminated in order to minimise potential confounds affecting

the Mu power results (i.e. changes in attention). As mentioned above, I consistently tested both central and occipital regions to test for potential alpha interference and based on the findings it may be concluded, that the Mu wave suppressions reported in the findings were driven by sensorimotor activation as opposed to attentional changes.

6.1.5.4 Experimental limitations

In the context of this research project, investigating kinaesthetic empathy within a clinical context, the main focus was on introducing an ecological paradigm (Jola et al, 2012) within the experimental process. Introducing live relational movement improvisation in the testing process (Silas et al, 2010), is considered an important step in this direction. However, recruitment of more participants would have safeguarded against the multiple loss of data points. The impact of the missing data points and small sample size on the findings is most noticeable in the examination of the action conditions. Notably, my EEG study failed to replicate previous findings that have shown differences in the action conditions I used (observation, performance and imitation). I speculate that this is predominately to the multiple lost data within the EEG testing. Specifically, more than half of the missing data points (20 out of the 35) involved the action conditions. Participants' increased animation, particularly during the performance and imitation conditions, affected the quality of the sample, thus resulting in more missing data.

Despite efforts to minimise the amount of missing data during the experimental procedure (by encouraging participants to reduce their movement range for example), a lot of data points were rejected due to the excessive amount of noise in the recordings. The testing conditions for the NHS Lab particularly, were not always to the most desirable standard. For example, as the EEG testing for the NHS Lab took place in the summer months, high temperature within the hospital rooms, caused the electrode net to dry up quicker, thus making recording of the EEG challenging. Environmental (noise, temperature levels) and physiological artefacts (muscular and facial movements) affected the quality of the recordings. The considerable amount of missing data made the analysis challenging as a few trials were excluded from the statistical tests. Considering the small sample size of the EEG study it may be argued that the loss of data points may have impacted on the robustness of the statistical findings. In the future, studies that build on this hybrid DMP/EEG design would

benefit from a larger participant sample, as well as a control group to account for the reliability of the examined intervention (here embodied practice) over time (before and after).

In choosing to explore each DMP condition separately (effort qualities and mirroring) I do not suggest that improvised movement can be reduced to a predictable or prescriptive outcome. For example, in exploring ‘sudden and sustained’ time the participant inevitably engaged with weight, space and flow as well, as dynamic effort qualities are naturally embedded within participants’ kinetic potential (Sheets-Johnstone, 2009). For this reason, the categorisation of movement conditions within the EEG experimentation may be contested by some. The intended aim was to explore whether attending to different movement qualities (with and without embodied experience) impacted participants’ embodied resonance over time. The EEG design attempted to capture embodied process (drawing from DMP practice) as closely as possible. With no existing EEG studies utilising embodied interventions based on DMP, a level of imaginative experimentation was required, notwithstanding the challenge of capturing abstract (improvised) movement. To test the reliability of the specific movement conditions used in this experiment, further studies need to be conducted. Going forward, experimental studies that investigate embodied practice would benefit from exploring congruent methods to the subject under investigation. In addition, future technological advances in the experimental equipment used for brain imaging, which would support reliable wireless connectivity and whole body movement could also support further developments in the investigation of kinaesthetic empathy and relational embodied practice.

Taken together, the findings presented in this chapter build on existing theories of embodied cognition and kinaesthetic empathy. Specifically, the increased sensorimotor activation observed during movement processing over time is consistent with existing evidence on ‘motor resonance’, which has been linked to the human mirror neuron network (Agnew et al, 2007). This ability to understand and represent the actions of others at a neuronal level has been further connected to empathic response (Gallese, 2006; Jola et al, 2012; 2011; Jola, 2012). To this end, empathy is not viewed as an abstract or intellectual concept but rather as an affective and relational phenomenon (Gallese, 2003; Berrol, 2006). It may be argued then, that visual and embodied processing of dance movement provides a congruent paradigm for the examination of embodied or kinaesthetic empathy. Experienced-movers’ motor fluency (Elk et al, 2008) with the movement repertoire processed experimentally, resulted in their heightened differentiation of the movement conditions (before the intervention). The fact that this finding was not evident after the intervention

suggests that non-experienced movers' acquired motoric familiarity cultivated their embodied resonance with the movement conditions over time. Finally, the overall increase in participants' sensorimotor activation (across groups and conditions) exhibited over time attests to existing evidence purporting that motoric and visual training may cultivate embodied resonance at a neuronal level.

6.2 Research Questionnaire (quantitative components)

As discussed in Chapter 4 (Interdisciplinary Methods pp. 58-83), in this study the research questionnaire was utilised as an indication of participants' conceptualisations of embodied empathy before and after the Embodied Practice Focus Groups (intervention). The quantitative component of the questionnaire included 4 closed (5-scale answer system) and 2 multiple choice questions. These questions complemented another set of 7 open questions (qualitative component) presented in Chapter 5 (pp. 137-138). In this section, I will outline participants' answers to the research questionnaire (quantitative components) particularly with reference to observed pre and post shifts in perception where concepts of embodied empathy are concerned.

A total of thirteen healthy adult research volunteers (recruited in Fieldwork Stage 1), completed the research questionnaire before and after the intervention: (i) NHS Lab (N=7) and (ii) Studio Lab (N=6) (see Chapter 4: Interdisciplinary Methods pp. 58-83, for research design details). Unlike standard empathy subscales, the research questionnaire was not intended as a measure of participants' empathic response within the investigation. The questions aimed to support participants articulate their understandings (meaning making) of kinaesthetic empathy before and after the intervention. In line with the phenomenological framework of this investigation, participants were involved in the decision making regarding completion of the research questionnaire. Specifically, some participants chose to complete the questionnaire 'blind' (without comparing answers pre and post), others opted for a review of their initial answers before providing their post-intervention responses while a third group of participants elected to submit their questionnaire electronically, thus altering their responses only where a perceived change had occurred. Rather than treating the research questionnaire as a testing process, participants were supported to use their agency in communicating their views in a comfortable and convenient way. Time limitation, participants' varied writing skills and use of English as a second language (in four instances)

were also taken into account during the facilitation of the research questionnaire. It is acknowledged that the approach followed does not lend itself to statistical analysis. For this reason, the research questionnaire findings are presented here as supplementary data of participants' developing understandings of, as opposed to an actual measure of, kinaesthetic empathy.

6.2.1 Findings

Overall, the multiple choice questions, exploring perceived 'enhancers and hindrances' of embodied empathy within clinical encounters, produced the most noticeable difference in participants' answers before and after the intervention. These questions were outlined as follows: (i) 'which of the following concepts do you consider as *enhancing* your ability to empathically relate to your clients?' and (ii) 'which of the following concepts do you consider as *hindering* your ability to empathically relate to your clients?' The multiple choice answers provided are presented in the table below:

Language	Facial expressions	Eye contact
Tone of voice	Spatial awareness	Gender
Cultural considerations	Hand gestures	Body language
Listening	Feeling listened to	Sexual orientation
Age	Religious beliefs	Moral ideas
Respect	Feeling respected	Position of authority
Personal experience	Physical environment	Self-awareness
Confidence	Professional orientation	Other (please enter)

Figure 37: Multiple choice research questionnaire answers with reference to perceived enhancers and detractors of embodied empathy within clinical encounters

Where 'enhancers' of embodied empathy were concerned, most participants (across both groups) perceived the above concepts as relevant to their empathic responses. The NHS Lab group showed a greater variation in responses (pre and post intervention). In contrast, the Studio Lab group yielded a relatively stable response before and after the intervention (as shown in Fig. 38 and 40 below). With regards to perceived 'hindrances' of embodied empathy within clinical encounters research participant answers painted a different picture. In the NHS Lab group fewer participants perceived the outlined concepts as 'hindrances' in their empathic responses and there was a tendency for a decrease in importance of the same concepts post intervention. For the Studio Lab group, even though fewer participants

identified these concepts as hindrances to their empathic response, there was a tendency for increased importance of the same concepts post intervention. These findings are summarised in Fig. 39 and 41 below.

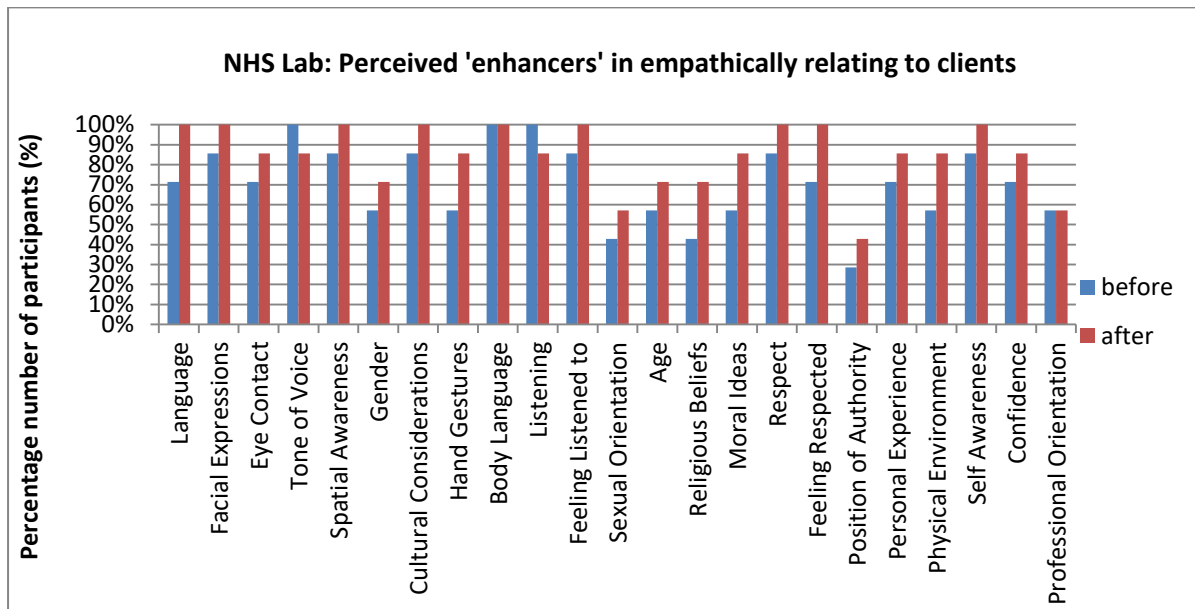


Figure 38: Perceived Enhancers of Empathic Relating - NHS Lab

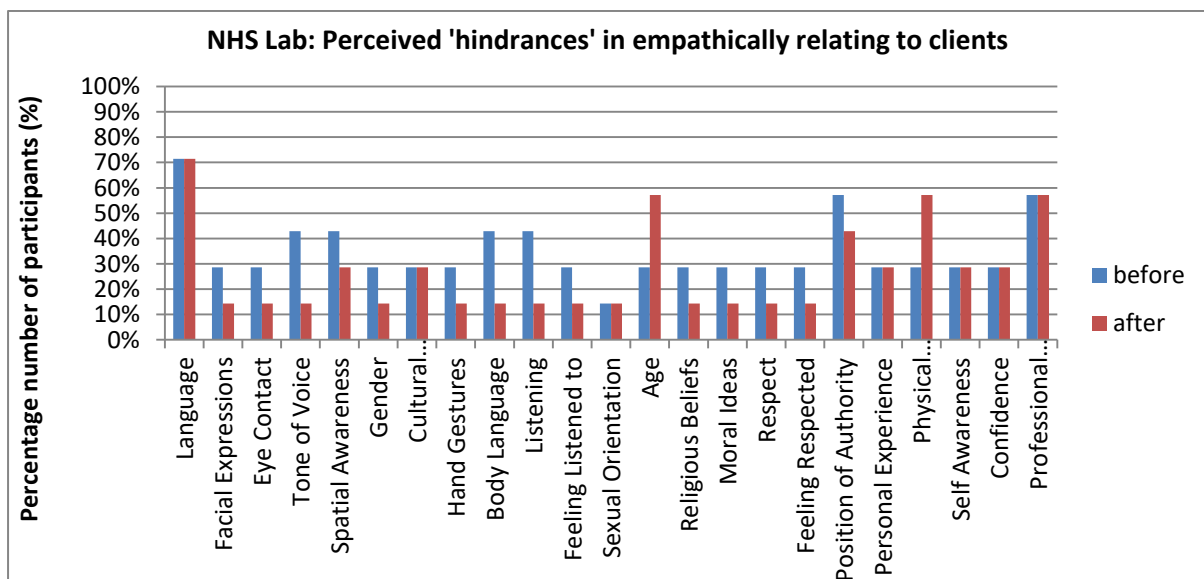


Figure 39: Perceived Hindrances of Empathic Relating - NHS Lab

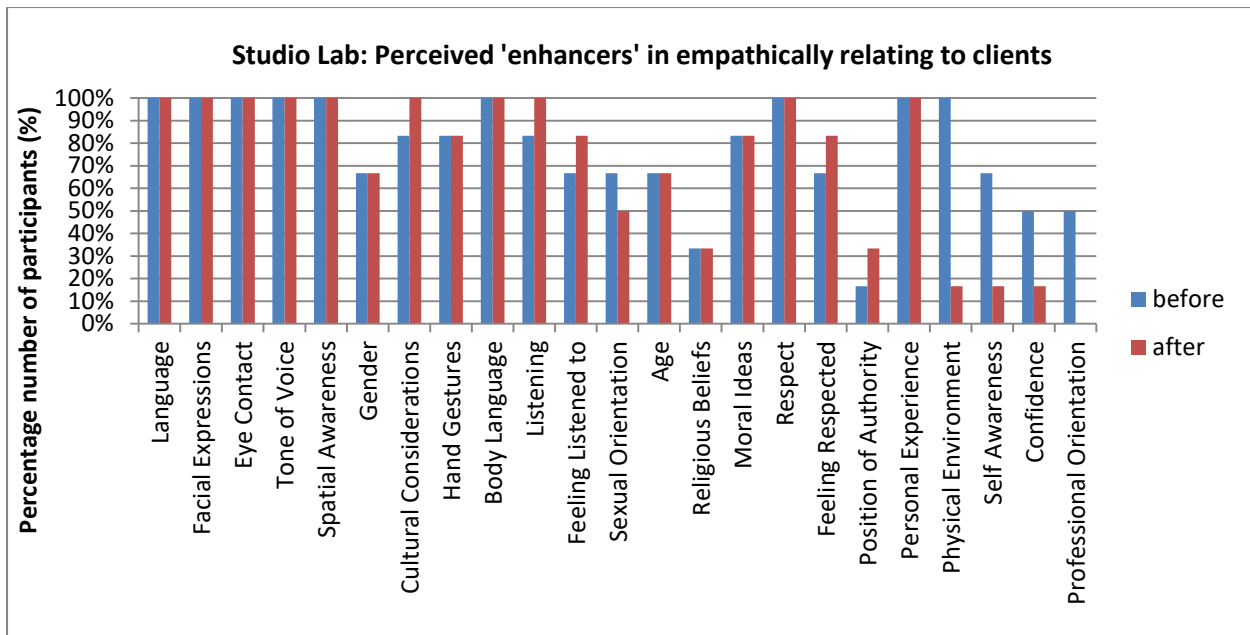


Figure 40: Perceived Enhancers of Empathic Relating - Studio Lab

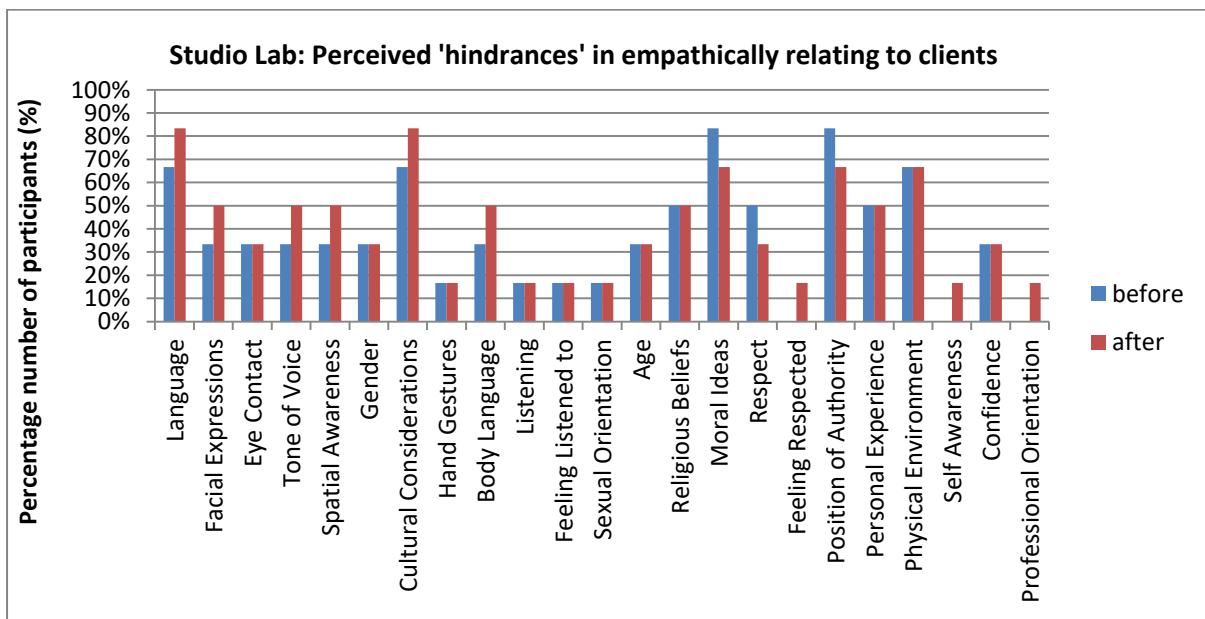


Figure 41: Perceived Hindrances of Empathic Relating - Studio Lab

Furthermore, three out of the remaining four (scaled) questions, exploring the importance of empathy and non-verbal communication within clinical encounters, produced no variation in participant responses pre and post intervention. Participant responses for both groups showed consistently that the concepts of empathy and non-verbal communication were perceived of some or most importance both before and after the intervention.

Question	Before & After	
	NHS Lab	Studio Lab
1. Importance of empathy	<i>Some: 14%</i> <i>Most: 86%</i>	<i>Most: 100%</i>
2. Relevance of non-verbal communication in practice	<i>Some: 14%</i> <i>Most: 86%</i>	<i>Most: 100%</i>
3. Ability to employ empathy	<i>Some: 14%</i> <i>Most: 86%</i>	<i>Some: 17%</i> <i>Most: 83%</i>

Figure 42: Summary of scaled questionnaire answers - Studio Lab and NHS Lab

Finally, the remaining closed question namely ‘How relevant is the following statement in your clinical practice: “I feel I have received/am receiving (please circle) enough training and/or support in dealing with challenging interpersonal experiences with clients”?’ yielded a different response post intervention for the Studio Lab participants as summarised below. NHS Lab participant responses were consistent before and after the intervention (Some: 14% and Most: 86%).

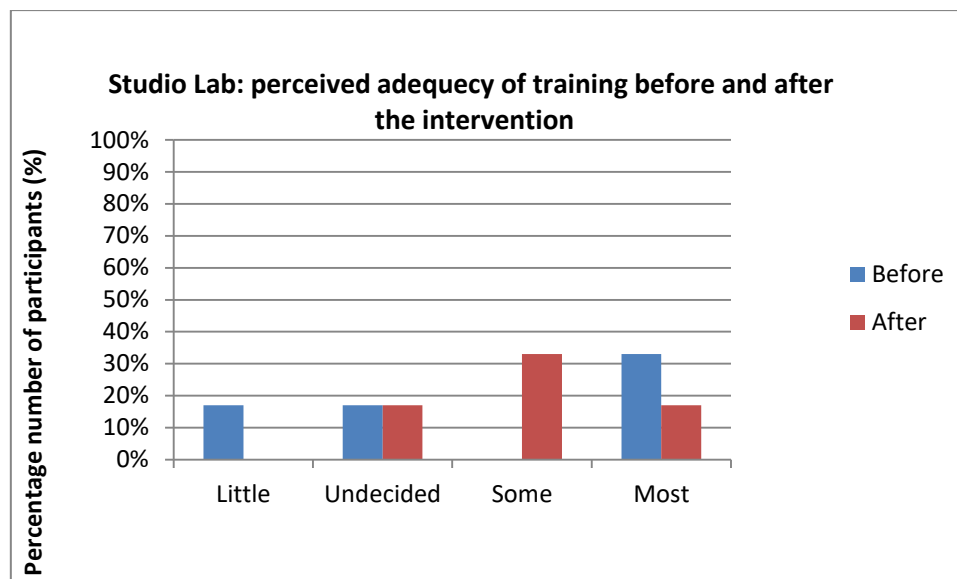


Figure 43: Perceived adequacy of training before and after the intervention – Studio Lab

From these observations it may be concluded that most research participants (across the two groups) identified with positive aspects of their relational non-verbal experiences more than they did with negative ones (see enhancers and hindrances). NHS Lab participants yielded greater variation in responses pre and post intervention, as opposed to the Studio Lab participants, with regards to perceived ‘enhancers and hindrances’

into their empathic response. Studio Lab participants showed a shift in their responses post intervention regarding the perceived adequacy of training (on kinaesthetic empathy). Taken together the findings discussed in this chapter will be considered alongside qualitative findings of the investigation in Chapter 8 (Interdisciplinary Discussion pp. 193-218). I now turn to Fieldwork Stage 2, which presents the qualitative findings emerging from the live dance theatre performance |mu|.

Chapter Seven: ‘Kinaesthetic Stories’ (Qualitative Findings – Fieldwork Stage 2)

This chapter presents the qualitative findings derived from *Fieldwork Stage 2: Embodied Performance (Studio Lab)*. Following ten choreographic workshops, based on the emerging thematic development of *Fieldwork Stage 1 (Studio Lab)*, a live dance theatre performance (entitled ‘|mu|’) was presented to an audience of approximately 70 people, including friends and family of the cast, trainee arts therapists, healthcare clinicians, the research supervisors and the general public. The performance was accompanied by a photography and art exhibition, capturing the creative and collaborative work during the compositional period of */mu/* (for full programme notes and credits see Appendix 14 pp. 35-36). As outlined in Chapter 4 (Interdisciplinary Methods pp. 58-83) the main aim of *Fieldwork Stage 2* was to ‘story’ the emerging concepts of kinaesthetic empathy, investigated in this study, through multi-modal artistic practice (including a live dance theatre performance, visual art and photography). Subsequently, the collection of audience and performer post-show reflections allowed for a further exploration of kinaesthetic empathy within a live performance context. Therefore, the qualitative findings of *Fieldwork Stage 2* are contained both within the live performance event (see DVD recording submitted with this thesis) and within the thematic analysis of *Kinaesthetic Stories*, based on written reflections of performers and audience members. The DVD viewing is recommended in conjunction with the programme notes (See Appendix 14 pp. 35-36) and the outline of the experiential tasks explored in the performance (see Appendix 13 pp. 31-34). The diagram below (Fig 44) illustrates the sequential development of *Fieldwork Stage 2*.

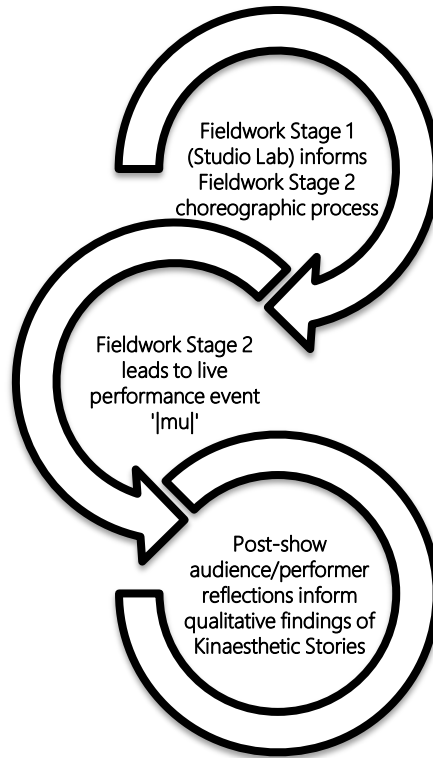


Figure 44: Fieldwork Stage 2 - Development of Qualitative Findings

The post-show reflections, provided by audience members and performers, were analysed thematically into four key components: (i) the knowing body, (ii) the performance journey, (iii) inter-connectedness and (iv) being moved. Building on the metaphor of the ‘wheel of kinaesthetic empathy’, introduced in Chapter 5 (pp. 84-85), the emerging concepts discussed in this chapter are considered as interrelated, mutually influenced and co-constructed kinaesthetic narratives within an artistic and embodied performance context (Allegranti, 2015). These four *kinaesthetic stories* offer additional practice-based and artistic understandings of kinaesthetic empathy, as part of the interdisciplinary methodology employed in this investigation.

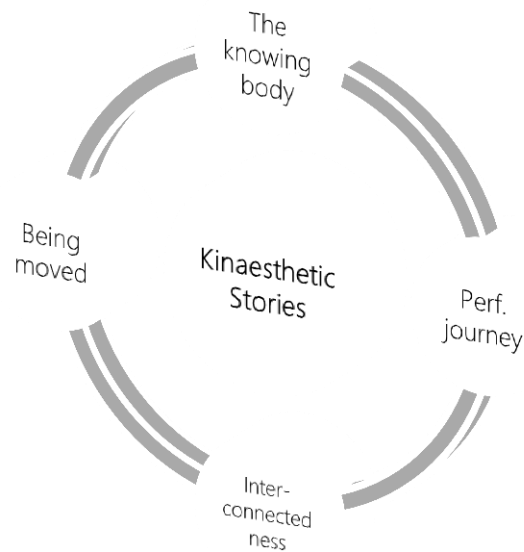


Figure 45: The Wheel of Kinaesthetic Stories

As already mentioned, the emerging findings discussed in this chapter are elucidated via the performers' and audience members' post-show reflections. The text is also informed by relevant theoretical underpinnings, as well as the author's evolving conceptualisation of *Kinaesthetic Stories*. As in the live dance theatre performance event the text is accompanied by visual and (kin)aesthetic 'crystallisations' (art, photography and video stills) drawing from the entire *Fieldwork Stage 2* process. Even though an (aesthetic) analysis of the visual contributions is beyond the scope of this investigation, an archive of key photographic and art work may be found in Appendices 16 and 17 (pp. 38 - 47). The images incorporated in the text provide additional non-discursive commentary on kinaesthetic empathy (Reason, 2012). Following Reason's (2012) example, I encourage the reader to "consider (the visual contributions of [mu]) as presentational forms of knowing that engage with mirroring and almost mirroring; with movement and the anticipation of movement; with empathy and invitations to touch and feel" (p. 255). Reason's concept of 'almost mirroring' highlights the elusiveness of kinaesthetic experience embedded in phenomena such as mirroring and empathy as captured through arts media – in this case visual images. Furthermore, as Berrol argues (2006) "(t)he capacity for and range of empathic responses are molded [author's spelling] by the experiences that influence the crystallization of personal and social identity in conjunction with one's own world view" (p.313). Therefore, the concepts of kinaesthetic empathy presented in this chapter do not point to fixed 'truths' but rather to possible meanings co-created in relationship between the performers, audience members and author.

This chapter draws on qualitative audience research studies (Jola et al, 2011; Reason & Reynolds, 2010), performance research (Carr, 2014; Gray, 2012), interdisciplinary practice-based investigations (Allegranti, 2013; 2015, Reason, 2012) and phenomenology (Merleau-Ponty, 1968; Sheets-Johnstone, 2009; Csordas, 2008) to tease out multiple experiences of, and (with)in, the shared kinaesthetic realm of live dance theatre performance. The terms ‘audience member(s)’, ‘viewer(s)’ and ‘spectator(s)’, on the one hand, and ‘mover(s)’, ‘performer(s)’ and ‘dancer(s)’, on the other, will be used interchangeably (for ease of textual flow) as distinct perspectives from which the theatre performance experience of |mu| is considered.

A pertinent clarification at this juncture relates to the very notion of ‘dance theatre performance’. As an art form dance comprises a range of stylistic, technical, philosophical, physical, theatrical, cultural, historical and political contexts. Therefore, the stories of kinaesthetic empathy outlined in this chapter are context-specific. In addition, the audience and performer narratives presented here, were collected in written post-show reflection and/or feedback form, as opposed to the more rigid data acquisition design applied to *Fieldwork Stage 1*. More accurately, it may be said that, this chapter languages the emerging kinaesthetic interrelatedness, between performer and spectator, as experienced within the live performance context of ‘|mu|’. The dance theatre performance itself was not a polished choreographic product, but rather an arrangement of improvised experimental performance tasks inviting both spectators and performers to discover and create meaning together and mediated by the author’s guiding research questions (see Appendix 12: Research Performance Outline pp. 31 - 34). As documented by several authors qualitative audience research is considered as an interactive and exploratory process that takes place after the performance event (Jola et al, 2012; Reason and Reynolds, 2010). Thus the written reflections collected after the performance, intended to capture some of the *invisible* (Merleau-Ponty, 1968) kinaesthetic phenomena unfolding during the performance exchange. The findings discussed in this chapter will later inform the possible intersections between dance movement psychotherapy, cognitive neuroscience and phenomenology in Chapter 8 (Interdisciplinary Discussion pp. 193-218).

7.1 The knowing body

The first theme emerging from the performer and audience reflections involved the recognition of another's experience in one's own body. Among the experimental tasks performed by the movers was a participatory engagement of spectators as they arrived into the auditorium. Five spectators were approached at random, each by a different performer, and invited to give their response to a question written on a card posed by the researcher (see Fig. 46 below). During a sequence of the performance, entitled *This Story is About...*, each mover embodied their response to the answer they received making sense of this in the moment.

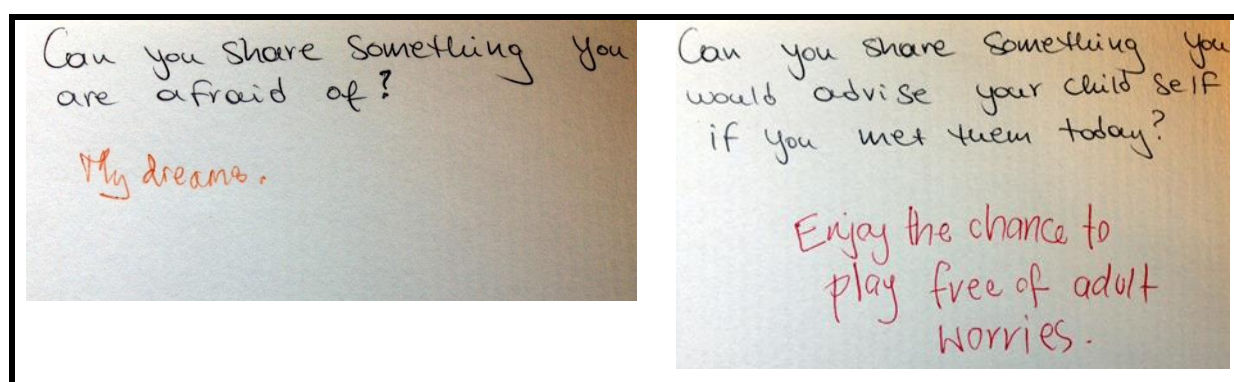


Figure 46: *This Story is About...* (performance question cards with audience member responses)

This participatory task, grounded on shared ownership and co-creation (between performer, spectator and choreographer/researcher), is akin to Merleau-Ponty's (1968) notion of a "reciprocal insertion and intertwining" (p. 138); also known in phenomenological terms as intercorporeality (Csordas, 2008). In other words, "we are never able completely to grasp ourselves nor separate ourselves from the world around us and those with whom it is shared (Carr, 2014, p. 56-57). Actively inviting audience members to engage in this exchange, as they entered the performance space, challenged traditional hierarchies of theatre spectatorship that place the dancer in the role of the 'entertainer' and the spectator in that of the passive onlooker. The following two excerpts reveal the dialogic interplay between spectator and performer during the sequence *This Story is About...*. In the first example, an audience member reflects on the impact of Geoffery's embodiment of a story, about 'freeing self from worry', onto their own body.

I felt I could really relate to his movements

The part I feel I could comment on the most was the gentleman's story around worrying. Perhaps because I too am a worrier, I felt I could really relate to his movements and that he captured them well. Interestingly the blowing he was doing is something I have done in the past as a means of trying to blow my worries away when trying to get to sleep with an overactive mind. I found it uncomfortable to watch him at times as I could relate to how he

felt, you know, like the thoughts were too much for him and were taking over him. I have kept thinking about him since the play so he has obviously had an impact.

Audience Member 1

The audience member's reflection suggests that his/her identification with the experience Geoffery embodied (*the blowing he was doing is something I have done in the past*) facilitated their relationship with the mover (*I could relate to how he felt...like the thoughts were too much for him*) and the material he was tackling (*the gentleman's story around worrying*) whilst transposing their own layer of lived experience onto the material (*trying to blow my worries away when trying to get to sleep with an overactive mind*). Indirectly, the spectator also entered into a relationship with the 'invisible' audience member who offered their story to Geoffery and with the researcher/choreographer who invited this dialogue through the audience participation task. It may be argued, that this multidimensional exchange is possible because of a shared 'working kinaesthetic sense' (Paterson, 2012) grounded in our bodily knowing of ourselves and in relationship with others (Allegranti, 2015). In the next excerpt, Evangelia gives a detailed description of her perspective during the audience participation task.

I had to make the experience mine

I was kind of dreading this moment. How can I re-tell someone's own story...? So I read the note and noticed how the words 'hit' me; what these words mean to me and the impact they have on my body ...I felt I had to make the experience mine in order to convey what this might have meant to this particular person... And suddenly I find myself doing a particular action and I try to go even deeper to this action. I struggle. I try to enlarge the feeling in myself. I notice that this helps. I even notice that my facial muscles respond to this, and here I am, I get it and lose it, I am in and out of this moment, of this feeling that is not someone else's anymore but mine...I start thinking 'am I really doing this right?', ...'is my experience any close to their experience?'... It was a real relief when after the performance was finished this person came to me to express their surprise (at) how somebody that they did not even know could be in their own mind and feel exactly the same way they were feeling.

Evangelia

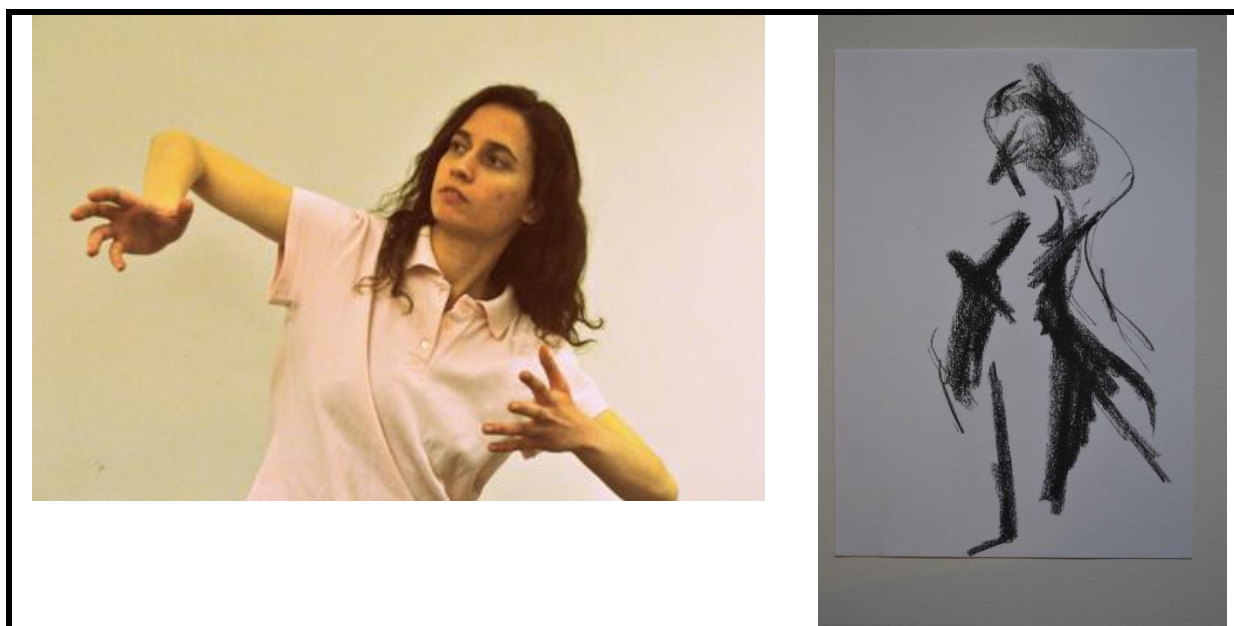


Figure 47: Evangelia in rehearsal. Photo by Miltos Dikaros, art work by Morgan Sinton-Hewitt

Evangelia admits she was *dreading* the audience participation task as she was unsure whether she would be able to ‘re-tell’ someone else’s story. Notably – contrary to a conventional dance production, where the dancer may be concerned about the technical and aesthetic delivery of their performance – in ‘|mu|’ the sense of anticipation is shared between performer and spectator as they both enter a dialogic exploration of the unknown. Through her investigation into the ‘ecological aesthetics of dance’ Carr (2014) explains that “(d)ance works that challenge audiences’ kinaesthetic expectations may not always be easy, either to perform or watch, but may engender intercorporeal negotiations that have the potential to lead to transformation” (p. 56). Interestingly, both the spectator and the performer became aware of, what could be described as, an ‘intersubjective tension’ as they entered this dynamic relationship: The audience member explains that she *found it uncomfortable to watch* at times, while Evangelia speaks of *struggl(ing)* as she attempts to find a personal connection to the spectator’s story. Both describe the encounter as having an *impact* on their personal experience. Paterson (2012) defines this kinaesthetic self-other reflexivity as “the proprioceptive ability to ‘feel’ and therefore recognise one’s own body and its movements” (p. 492). And as Jola et al (2011) suggest dance performance engages spectators (and I would add performers as well, as evidenced by the participant reflections) on multiple levels including perceptual, emotional, cognitive and meta-cognitive.

Evangelia describes that by *enlarge(ing) the feeling* she was able to *mak(e) the experience 'hers'*. While Evangelia wonders if she is *doing this right* and whether her experience is close to that of the spectator's, at the end of the performance she is rewarded with *relief* as the audience member shares *their surprise (at) how somebody that they did not even know could be in their own mind and feel exactly the same way they were feeling*. Evangelia could not possibly 'know' the actual circumstances or context of the spectator's story. Similarly, the audience member could not foresee Evangelia's embodied response to their story, when the question was posed to them. However, the moment the story takes form (is embodied) within the intersubjective field (created by the performance) the performer and spectator mutually recognise and co-construct each other's subjectivities (Allegranti, 2015). The story is now *known* by both the mover and the viewer and belongs to *both* equally *and* each separately. As Carr (2014) astutely points out:

For the audience, engagement with the dancers' explorations of somatic experience may inform (even challenge) their own consciousness of being in the world. The potential for such responsive sensitivity may be of increasing importance to artists working in a rapidly changing social realm who aim to create work, the significance of which, while never fully shared, is available to a process of intercorporeal negotiation across difference.

p. 57

It may be suggested, therefore, that the kinaesthetic awareness of self-other (inter)relationships within artistic contexts may not only be of value for performers or spectators, but may also be beneficial as a social (and/or educational) intervention towards nurturing the capacity to relate to others (Aden, 2014).

7.2 The performance journey

The second component of *Kinaesthetic Stories* relates to the experience of 'performance as a journey'. In the first two excerpts two audience members describe their experiences of *being taken on a journey* (audience member 2) and *discovering meaning* alongside the performers (audience member 3).

I found myself being taken on a journey

I found myself being taken on a journey through bodily reactions, emotions and memories. I felt like I was swinging between just observing and the desire to stand up, participate and

explore each moment with others and by myself. In both cases, I felt there was enough space for me to "stay with" the performance and accept the experience fully.

Audience Member 2

The spectator relates her experience of *being taken on a journey* to her *bodily reactions, emotions and memories* triggered by the performance. Audience research has shown that “(s)pectators frequently report that even while sitting still, they feel they are participating in the dance they observe, experiencing movement sensations and related feelings and ideas” (Jola et al, 2011, p.20). The audience member not only identifies a kinaesthetic response in her experience of watching the performance but alludes to an active *desire to stand up, participate and explore*. Reason and Reynolds (2010) suggest that audience responses to dance spectatorship depend on personal experiences of dance (such as motor familiarity of movement) and other socio-cultural factors (gender, body image and fitness). It may be argued, therefore, that the experience of dance performance is situated within the intersubjective field, mutually informed by audience and performer narratives, and shaped by the cultural and environmental contexts within which they are created (Carr, 2014). This phenomenological intercorporeality (Csordas, 2008) becomes explicit in the next spectator’s reflection as the notion of *discovery*, shared between performers and audience members, is explored.

We were all going on the same journey of discovery together

It was clear that the piece was not a rigidly choreographed work...and that the performers were exploring their movements and discovering there and then what the movement meant for them. Far from being uninteresting I found this really compelling, to be watching the meaning being created there and then in front of me. I was captivate by what might happen next and felt like we were all going on the same journey of discovery together, audience and performers. I found myself wondering about everyone’s different interpretations, what were the other audience members seeing that I wasn’t, what meaning was being made for them vs what I saw.

Audience Member 3

Here the viewer considers the meaning being created in the moment by the performers and audience members alike. The audience member specifically conceptualises meaning in terms of *different interpretations*. A parallel perspective may be found in Allegranti’s (2015) notion of ‘multiplicity’, as an alternative framework to fixed meanings of sexuality and gender. Building on Allegranti’s idea, it may be suggested that multiplicity underpins both the performer’s and spectator’s embodied experiences in the world. Furthermore, as per Reason’s (2012) theorisation, it may be argued that ‘movement potentiality’ – “the ambiguous starting

point from which movement seems possible” (p. 251) – directly informs not only representations of movement but also their possible meanings: “the exact nature and indeed meaning of that movement is determined by the viewer’s imaginative and emotional engagement” (p. 251). And, as Sheets-Johnstone (2009) suggests the world that the performers are exploring in performance is inseparable from the world they are co-creating. Similarly, the meanings being discovered between performers and audience members are inseparable from the meanings they are mutually co-creating in the moment. In the next excerpt, Geoffery associates the performance journey to the creative process utilised in dance movement psychotherapy.

Audience and dancers transported elsewhere

I am also reminded of the power of an embodied dance performance where the audience and dancers are transported elsewhere during the performance. This is akin to what happens in dance movement psychotherapy - the shared kinaesthetic and empathic movement experience allows clients and therapist to travel to other places and ways of being, as an exploration of the possibilities of how we might live our lives...The power of dance to take us to different ways of being and to then return to the here and now!

Geoffery

This reflection reveals the complexities between consciousness-world and self-other interrelationships (Carr, 2014). Geoffery speaks from his perspective as a dancer and dance movement psychotherapist engaging in embodied explorations of kinaesthetic empathy in a live dance theatre performance context. He suggests that spectators and dancers *are transported elsewhere during the performance*. The link Geoffery makes in relation to the parallel process between dance movement psychotherapy and dance performance is, arguably, a vital area for consideration for both clinicians and dance artists. Through her Embodied Performances interdisciplinary research Allegranti (2015) urges the DMP profession to ‘re-claim’ its artistic and choreographic roots by paying attention to how we ‘reconfigure’ our (embodied) subjectivities throughout our life. DMP’s choreographic and performance underpinnings are elaborated on in Chapter 8.1 The Dancing Body: Psychotherapy and Performance Intersections (pp. 202 - 207). Geoffery’s reflection highlights the potential for embodied performance to facilitate experiences of ‘escapism’ and self-awareness (for both movers and viewers) in the ‘here and now’. Moreover, as Reason and Reynolds (2010) argue, spectator experiences of watching dance also need to be considered within the framework of ‘kinaesthetic pleasure’:

The consideration of pleasure alongside that of kinesthesia allows us to recognize that for one spectator the empathetic response might be to allow themselves to be bodily carried away by an escapist flow of movement, while for another it is to feel viscerally involved in an awareness of effort, muscle, and sinew. Consideration of pleasure similarly allows us to recognize different desired self/other relations between spectator and dancer(s), which ranged from pleasure in intimacy and closeness to discomfort and displeasure in proximity and desire for aesthetic distance, including distance from one's own (imperfect) self.

p. 72

This difference in 'desired self/other relations', or else conceptualised as 'multiplicity' (Allegranti, 2015) in this section, was explored extensively in '|mu|'. During a sequence entitled 'mu is...' performers explored different interpretations of the word 'mu' to denote the multiplicity in perspective, experience and meaning making. Thus, Elizabeth embodied 'mu' as an "EEG oscillation occurring over the motor cortex", Mafé explored 'mu' as "a legendary lost continent in the pacific ocean", Evangelia revealed 'mu' to mean "mine in Greek", Mira viewed 'mu' as "the 12th star in a constellation" and Geoffery embodied a Buddhist interpretation of 'mu' meaning "prior to experience or knowledge". Similarly, embodied meaning making was unpacked phenomenologically as the movers literally journeyed through their intersubjective and kinaesthetic explorations. For example, during the 'pathway' sequence performers were invited to travel across the space embodying a personal intention or purpose. The remaining performers mirrored the lead mover's exploration asking questions in support of the emerging formulation and articulation. Also during the 'yes-no' duet Geoffery and Elizabeth embodied polarised positions and perspectives through relational improvisation. Despite |mu| being structured, through a sequence of performance tasks, each performance event (including the rehearsal sessions, previews and final performance) revealed new movement material and interpretations thereof. Thus, each performance became a journey (into the unknown) moulded dialogically by those present within the intersubjective field created between the performers, the audience members and the researcher/choreographer. As Sheets-Johnstone (2009) states "intercorporeal meanings are ... etched along the lines of kinetic/tactile-kinesthetic bodies" (p. 231). Therefore, kinaesthetic intersubjectivity (Allegranti, 2013) informs both individual and social discourses of self-other understandings.



Figure 48: Geoffery in rehearsal and during the live performance (video still). Photo by Miltos Dikaros, artwork by Morgan Sinton-Hewitt

7.3 Inter-connectedness

The third component of Kinaesthetic Stories involves the notion of ‘inter-connectedness’. The initial two excerpts below relate to the performance sequence introduced earlier: *This Story is About...* First we hear from Elizabeth reflecting on making a connection with an audience member as she engages them in the interactive task. Then the audience member’s partner (co-engaged in the task) reflects on the impact Elizabeth’s interaction with them had on their experience of watching the performance.

Reaching wider into the world

The audience are arriving and we, the performers are with them in the space. I feel an immediate sense of intimacy with everyone who enters and settles down in their seat. I sense a mutual feeling of anticipation between them and me. From my former years of performing, I am used to a much clearer boundary between performer and audience. A deliberate disconnect even. Here, I open myself to who is entering, how they are moving and where they position themselves. As familiar bodies enter the space my small self is drawn to them and not a stranger. The part of myself that reaches wider into the world takes over and I find myself approaching the person in the room who looks the least comfortable and that I sense is looking inwards for comfort - perhaps I feel a connection? I feel (their) response to my approach and my question in my body: it has shaken (him/her))

out of him/herself and he/she needs time to adjust. They take a long time to respond and write a lot. I have not yet read the contents but I feel warmth and emotion moving around my body as I sense their deepening connection with the experience. This has set a tone for me now. Through this interaction I have made a connection, with the audience and with myself, which I know I must hold onto during the rest of the performance.

Elizabeth

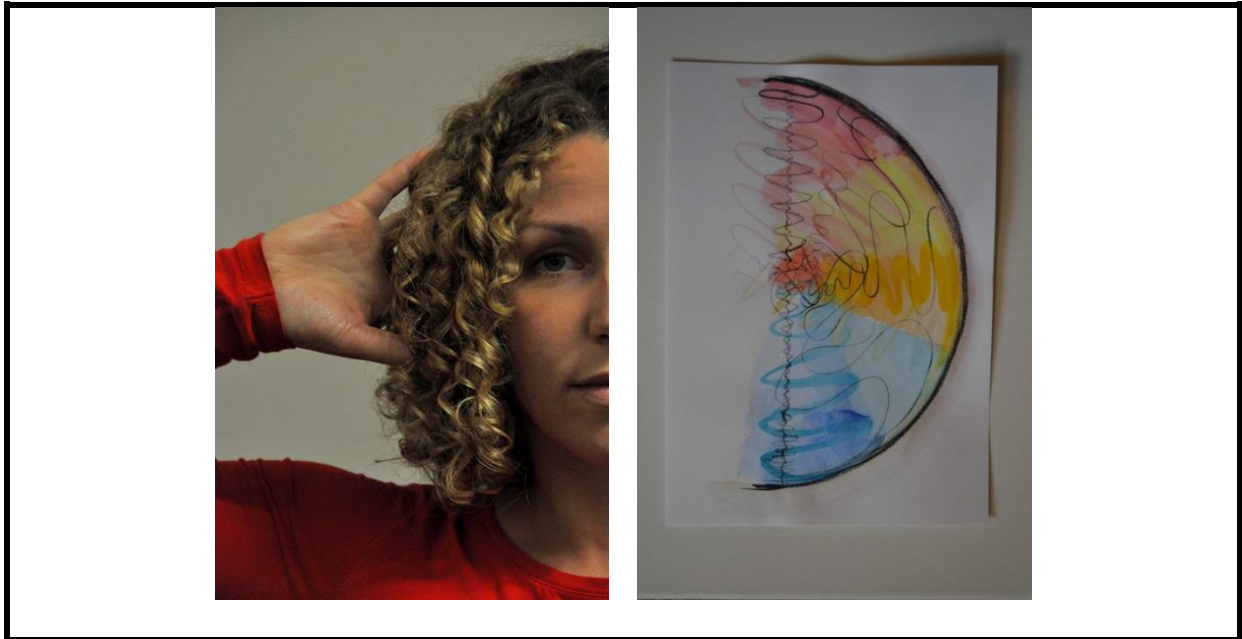


Figure 49: Elizabeth in rehearsal. Photo by Miltos Dikaros, art work by Morgan Sinton-Hewitt

From the outset of her performance experience Elizabeth identifies a *sense of intimacy* and *anticipation* as she witnesses the audience members take their seats in the auditorium. Perhaps it was the close proximity of the viewing area to the performance space that softened the divide between performer and spectator. Perhaps the viewers' arrival being met with the dancers' welcome into the space provided a mutual recognition of each other's humanity and vulnerability. As Carr (2014) suggests, the dancers' awareness of the presence of the spectators affects their experience of and movement within the performance space. Elizabeth recalls 'opening herself' to people's movement and positioning, and *reach(ing) wider into the world* she made a connection with an audience member who seemed *the least comfortable*. The performer goes on to suggest that her engagement with the audience member resulted in his *deepening connection with the experience*. Elizabeth's description is reminiscent of Reynolds' (2012) notion of 'affective choreographies', a term coined in relation to 'unsettling inner/outer boundaries' that provoke reflexivity through bodily and sensory experiences. The *connection* Elizabeth describes in her reflection is multimodal (visual, kinaesthetic, verbal

and kinetic) and intersubjective (relational, dialogic and embodied). The next excerpt is from the audience member's partner, in response to her interaction with Elizabeth:

I found myself drawn more to watching her

The thing that really stood out for me was the connection I felt for Elizabeth's performance most of all. I think this might have been because she came and spoke with my partner and I before the performance started, she asked my partner for a suggestion which she later embodied during the performance. Because of this perhaps I found myself drawn more to watching her more than any of the other performers. Even when I became conscious of this, and tried to steer myself towards watching the others I would always find myself feeling more connected, or 'enjoying' her movement more than the other performers.

Audience member 3

Perception seems to play a crucial role in the experience of inter-connection described by both the performer and viewer above. Sheets-Johnstone (2009) resists a separation between sensing and moving perception as she explains: "the global dynamic world I am perceiving, including the ongoing kinaesthetically felt world of my own movement, is inseparable from the kinetic world in which I am moving" (p. 32). She goes on to suggest that movement and perception are seamlessly interwoven as "there is no 'mind-doing' that is separate from a 'body-doing'" (Sheets-Johnstone, 2009, p. 32). In line with this perspective, and building on Gardner's distinction between kinetic and kinaesthetic perception Victoria Gray (2012) proposes a constructive tension between the two through her investigation of 'empathetic experiences of stillness in performance and sculpture'. Gray (2012) argues that where 'kinetic reception' involves the visual perception of movement, stillness "facilitate(s) the time and space necessary for kinaesthetic perceptions of the body to evolve between performer and spectator" (p.202). Challenging the conventional relationship between (the still) viewer and (the moving) performer in dance performance Gray (2012) embodies stillness as part of her work provoking kinaesthetic responses through the shared intersubjective experiences between performer(s) and audience member(s).

The visual materiality (Sheets-Johnston, 2009) of our (moving) bodies places experiences of 'seeing and been seen' at the centre of our intersubjective relationships. By *seeing* (and approaching) the audience member, and thus acknowledging their (inter)subjectivity in the moment, Elizabeth 'shook them' into *seeing* (becoming aware of) themselves. This intersubjective entanglement (Allegranti, 2013) further materialises through the movement during Elizabeth's embodiment of *their* (audience member's) story. The 'seer' (spectator) thus became the 'seen'. Equally, Elizabeth's subjectivity as the 'seeing *and* seen'

mover facilitated what Allegranti (2015) describes as a reciprocal and non-objectifying gaze between the performer and audience member.

The multiple components of kinaesthetic empathy investigated in this study, including familiarity, embodied knowing, intersubjectivity, mirroring, socio-political dynamics and kinetic attunement, were unpacked extensively in Chapter 5: Embodied Words – Qualitative Findings Fieldwork Stage 1 (pp. 84-138). Following on the developing formulation of kinaesthetic empathy in this chapter, it may be argued that embodied performances that invite performers and spectators to (inter)actively attend to their kinaesthetic (intersubjective) experiences of (embodying and witnessing) dance can make a valuable contribution towards wider self/other and consciousness/world understandings (Carr, 2014), within clinical and social contexts. In the last excerpt Geoffery considers the context within which *the web of empathic and kinaesthetic connections* was ‘weaved’ during the performance of |mu|.

The web of empathic and kinaesthetic connections

I am led to believe that all the empathy provided enough support for the emotional, psychological and physical journey we all shared. I wonder how it is that so many empathic connections were sustained for the whole time. Is it due there being so many dance movement psychotherapists and/or dance practitioners in the space? Was it due to the performers and yourself (the researcher) already being in empathic relationships with the audience members? Was it the context of the evening? Maybe all of these! As I write this I have come to thinking that due to the context and the audience members, I was able to revel in the web of empathic and kinaesthetic connections I have with lots of the audience members...Revelling in the moment free from inhibitions and expectations of past and future.

Geoffery

Geoffery reflects on the interconnection between the empathic context created by his relationship with (some) audience members (many of whom had personal, social or professional relationships with the performing cast) and his experience of the *emotional, psychological and physical journey...* during the performance. Geoffery’s comment alludes to the notion of familiarity as a mediator of kinaesthetic empathy, analysed in Chapter 5.1.2 Familiarity (pp. 97-102) and Chapter 6 (pp. 159-167), as he suggests that the established empathic relationships he had with different audience members might have supported *(t)he web of empathic and kinaesthetic connections* he experienced during the performance. As Jola et al (2011) suggest “(r)ather than purely personal and private, experience is treated as socially mediated, (therefore) audiences are considered as active agents in constituting the meaning of the performance” (p. 28). Moreover, building on Allegranti’s (2011) theorisation

of the moving body as autobiographical, relational and political, it may be suggested that the *context* within which our empathic responses become possible is constantly ‘re-configured’ within the reciprocal, relational and kinaesthetic experiences we engage with. In this sense, if Geoffery’s established familiarity with some viewers provided the necessary environmental and psychological ‘affordances’ (Gallagher, 2007; 2008) for him to experience empathy to begin with, the new context created by the performance act itself (including those audience members he was unfamiliar with) allowed him to deepen his (kinaesthetic) experience: *(r)evelling in the moment free from inhibitions and expectations of past and future*. Furthermore, as improvisation (and phenomenological questioning) formed the basis of this research performance, the performance context came into being moment-by-moment and was co-created by performers and audience members in this time and space. It is precisely because dance improvisation enables the creation of an ‘unbroken now’ that Geoffery was able to *revel in the moment* through “an on-going flow of movement from an ever-changing kinetic world of possibilities” (Sheets-Johnstone, 2009, p. 30). Based on the analysis so far, it may be suggested that the mover-viewer kinaesthetic inter-connectedness manifests both pre-reflectively (through proprioceptive kinaesthetic experience) and discursively (within reflective intersubjective understandings).

7.4 Being moved

The final component of Kinaesthetic Stories considers *being moved* by (and/or in relation to) another’s movement. A prominent feature in the audience feedback I collected, involved viewers’ use of the words ‘moved’ and ‘moving’ to denote their affective responses to their experience of watching the performance, as the two excerpts below demonstrate:

By moving with others we move ourselves

Very moving, bringing me to my body. It was nice to watch, to be there but it was hard to sit and not move with the movers. (A) very sensitive piece with sincere and detailed work.. We are all in one, through others we see ourselves. By moving with others we move ourselves. I am very moved.

Audience Member 4

Moving myself into moving with them

Moved by the movers, moving myself into moving with them in their moments of moving.

Audience Member 6

The common root of the words ‘moved’ and ‘moving’, used to describe both physical movement and an emotional response, alludes to *change* as the essence of both interpretations of the word. Where physical movement denotes a change of position in time and space, ‘being moved’ emotionally indicates a shift in the person’s affective state. The examples above expressly connect viewers’ personal affective responses to their experience of watching the performance work. Through their audience research Reason and Reynolds (2010) conclude that “(w)hether sympathetic, empathetic, or contagious, the kinesthetic experience can be described as an affect” (p.72). In her analysis of de Rivera’s ‘geometry of emotions’ Sheets-Johnstone (2009) points to the tactile-kinaesthetic dynamics between movement and emotions: “all emotions resolve themselves into extensional or contractive movement, movement that goes either toward or against or away from an object, including the object that is oneself” (p. 204). A parallel, and lengthy, analysis of ‘affect in (kinetic) effort’ is offered in Chapter 5.1.1.3 Affect in Effort (pp. 92-97) through the investigation of Laban Movement Analysis (Sheets-Johnstone, 2009; Loman, 2009), verbal/non-verbal communication (Loman, 2009; Meekums, 2012; Allegranti, 2015) and environmental affordances of embodied experience (Gibson, 1979; Gallagher, 2007; 2008) within clinical contexts. Arguably, attending to the interrelationship between movement and affective experience is one of DMP’s most important contributions to psychotherapeutic practice and psychological understandings of embodiment. In this chapter, and based on the emerging qualitative findings, I expand on the notion of *embodied change*, experienced intersubjectively, as shown in the next reflection offered by Elizabeth. The performer comments on the influence of others’ presence (fellow movers and audience members) on her lived experience during the performance.

The audience has entered the relationship

The performance starts. We start to hum, meow, groan and growl. As our expressive voices begin to fill the space, I am aware of how my voice sounds in a way that I wasn't during our rehearsals. This is now a triad instead of a dyad. The audience has entered the relationship. Throughout the performance I am aware of myself, my fellow performers, the audience as a whole, and individuals within the audience. Who has a more prominent presence constantly shifts. After the performance I do not have the familiar post-show feeling of having 'conquered' a piece, a technique or an audience with the elevated rush of adrenaline which comes with it. Instead, I feel a warm satisfaction that I have joined others in a communication and connected in unexpected ways with feelings and people.

Elizabeth

Elizabeth's narration brings into focus the relational and embodied exchanges happening simultaneously between performers and audience members during the dance performance. As demonstrated by the improvisational and phenomenological methodology used in the performance, Elizabeth's *aware(ness) of (her)self, (her) fellow performers, the audience as a whole, and individuals within the audience* became possible through an active recognition of the others as equal partners in the relationship. This is further acknowledged by the mover's *warm satisfaction that (she) joined others in a communication and connected in unexpected ways with feelings and people*. This inclusive and interactive approach, facilitating the sharing of narratives and feelings between performers and spectators, is modelled by social improvisational theatre initiatives such as Playback Theatre and August Boal's 'Forum Theatre' and 'Theatre of the Oppressed'. These examples of community performances, straddling the boundaries between artistic practice and social intervention, suggest that "the narratives we experience on a daily basis, when performed and reviewed, can provide the potential for profound change both culturally and politically" (Nunes Tucker, Price & Diedrich, 2010, p. 183). These social performances invite live audiences to actively engage in the construction and re-presentation of personal, social and political narratives that aim to bring about personal and collective change. Another example of dance performance as social intervention may be seen in Allegranti's (2015; 2012; 2013) screendance works. By using film/camera work as a 'social technology' both within the creative process and as the final artistic product, Allegranti (2015) exemplifies "an ethical approach to performance practice where choreographers and filmmakers can be attentive and sensitive to the ethical implications of working with personal material...extend(ing) the boundaries of the form and further...creat(ing) a context for dance as social intervention" (p. 204). As discussed elsewhere in this chapter, this ethical approach of working with embodied material and performance may be of value not only within social or artistic contexts, but it may also provide further opportunities for educational and healthcare interventions.

This chapter considered kinaesthetic empathy as an intersubjective experience between movers and viewers within the live dance theatre performance context of |mu|. The four Kinaesthetic Stories presented, as amalgamations of the movers' and viewers post show reflections, explicated 'the knowing body', 'the performance journey', 'inter-connectedness' and 'being moved' as integral concepts within the performance experience of |mu|. I conclude

this analysis with a poem constructed in collaboration with the performers, during *Fieldwork Stage 2*, performed and exhibited within the live dance theatre performance.

What does it all mean?
Moving on the edge inside or out
I find his rhythm
I find her rhythm
We find our rhythm together
Sliding under the mirror of recognition
Dancing the colour orange
Each moment another meeting
Each moment another opportunity
Each moment another narrative
Seeing self through other through self
I see you...I see you, see me
And we become we
Gravity and grounding embodied earth
M(e and yo)u
mu



Figure 50: (top left) Geoffery and Mira in rehearsal and (below) Geoffery, Evangelia, Elizabeth, Mafe and Mira (being rolled on the floor) during the performance (video still). Photo by Miltos Dikaros art work by Morgan Sinton-Hewitt

Chapter Eight: Interdisciplinary Discussion

The main objective of this research endeavour was to investigate the embodied relational - implicit and explicit - processes of kinaesthetic empathy as experienced by multi-disciplinary practitioners (NHS clinicians, DMPs and dance practitioners) with variable experience in embodied practice. The emerging qualitative, quantitative and performance research findings deriving from the two fieldwork stages (*Fieldwork Stage 1: Data Collection* and *Fieldwork Stage 2: Embodied Performance*) and the interdisciplinary approaches (embodied practice focus groups, EEG and performance) utilised in this investigation were presented in chapters 5, 6 and 7 respectively. The purpose of initially presenting these findings separately was to allow for in-depth engagement with each methodological perspective, informed by relevant theories and approaches, before considering the potential intersections and diversions across the different fields. Drawing from the emerging knowledge production discussed in this thesis so far, the crossover examination of the research findings, conducted in this chapter, highlights the potential art-science-healthcare junctures towards building a collaborative and interdisciplinary discourse on the subject of kinaesthetic empathy.

In chapter 5 (Embodied Words pp. 84-138) the qualitative formulation of ‘the wheel of kinaesthetic empathy’ was introduced denoting the six emerging thematic components congruent with both research groups; experienced movers (Studio Lab) and non-experienced movers (NHS Lab). These six (qualitative) components included (i) kinetic attunement, (ii) familiarity, (iii) intersubjectivity, (iv) socio-political dynamics, (v) embodied knowing and (vi) mirroring. These concepts were extensively unpacked across 19 subthemes weaving participants’ accounts with the author’s emerging formulation underpinned by relevant psycho-social theorisation. The qualitative analysis of the research questionnaire highlighted participants’ developing conceptualisations of kinaesthetic empathy over time including: (i) definitions of empathy, (ii) empathy and the therapeutic relationship, (iii) non-verbal communication, (iv) empathy within clinical contexts and (v) embodied learning.

Chapter 6 (Embodied Numbers pp. 139-173) presented the quantitative findings stemming from the EEG experimentation before and after the embodied practice intervention. The results of the statistical tests carried out showed that overall, excluding group as a factor, participants demonstrated higher sensorimotor activation after the intervention across

experimental conditions during movement processing. It was also found that Studio Lab participants demonstrated greater differentiation in processing movement conditions before the intervention, compared to NHS Lab participants, but not after. The quantitative components of the research questionnaire broadly revealed research participants' affinity with positive aspects of their relational non-verbal experiences.

Following a live dance theatre performance (including a photography and art exhibition), and after thematically analysing a combination of audience member and performer post-show reflections, the performance findings were presented in Chapter 7 (pp. 174-192) in the form of four 'kinaesthetic stories'. These included (i) the knowing body, (ii) the performance journey, (iii) inter-connectedness and (iv) being moved. These narratives considered 'kinaesthetic empathy' within the artistic and aesthetic context of the live dance theatre performance '[mu]' with reference to other published audience and performance literature. Figure 51 below outlines the cross-examination of the key interdisciplinary research findings.

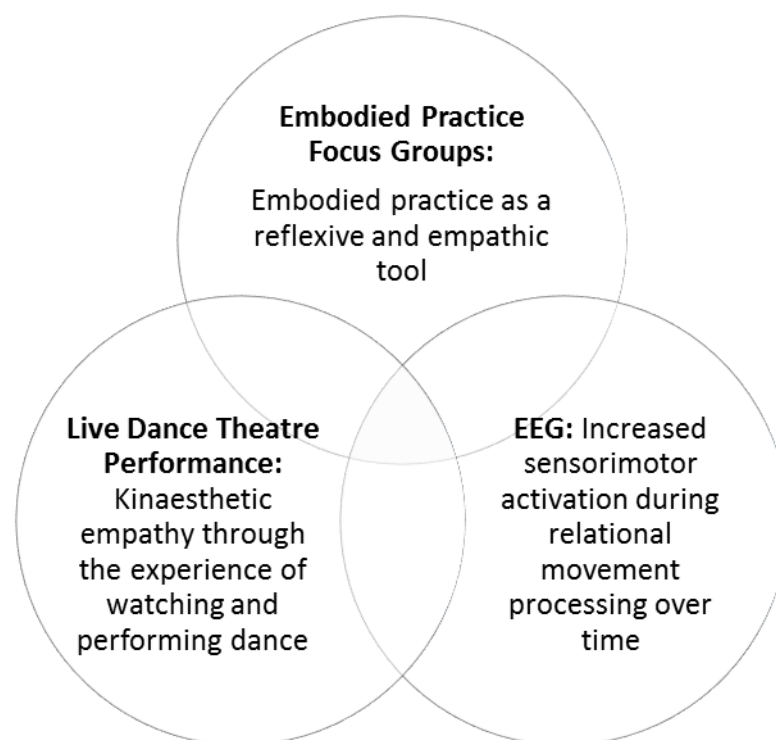


Figure 51: Cross-examination of Key Interdisciplinary Research Findings

By combining these diverse research findings in this chapter, a new possibility emerges through the intertwining of methodologies, theories and perspectives. Revisiting the

original research questions, I offer emerging possibilities (as opposed to fixed answers) based on the interdisciplinary formulation of this investigation. The discussion is organised in six sections each tackling a different ‘problem’ in the examination of ‘kinaesthetic empathy’. Initially, *8.1 Kinaesthetic Empathy: Innate Capacity and Acquired Knowledge* (pp. 195-201) considers the biological and cultural layers of embodied empathy including notions of ‘automaticity’ and ‘plasticity’ within embodied processing and empathic understanding. In *8.2 The Dancing Body: Psychotherapy and Performance Intersections* (pp. 202-207), the link between dance movement psychotherapy and performance is reclaimed, underpinned by the practice-based, artistic and scientific theorisation developed in this thesis. Next in *8.3 Embodied Reflexivity: MODEs of interaction* (pp. 208-210), I outline my developed practical approach of kinaesthetic empathy as shaped by the different experiential, philosophical and scientific approaches utilised in this project. In *8.4 Minding the (Moving) Body* (pp. 211-212), I consider emergent theorisations of embodiment in psychotherapeutic and broader clinical practices and argue for the importance of recognising moving bodies as the basis of our lived and relational experience in the world. I continue the interdisciplinary discussion with a section considering the relevance of the term ‘empathy’ within current notions of intersubjectivity and embodied interrelatedness, in *8.5 To ‘Empathise’ or Not to ‘Empathise? That Is The Question* (pp. 213-214). Finally, the chapter concludes with a review of the interdisciplinary approach adopted in this study, in *8.6 Interdisciplinary Investigation: Treasures and Pitfalls* (pp. 215-218), commenting on the lessons learned along the journey of this research project.

8.1 Kinaesthetic Empathy: Innate Capacity and Acquired Knowledge

The experiential (embodied practice and performance), phenomenological (qualitative findings) and experimental (quantitative findings) aims of the investigation were to explore participants’ implicit and explicit, or visible and invisible, kinaesthetic responses (and understandings) before, during and after the embodied practice intervention. In addition, the investigation considered the relevance of embodied training in experienced and non-experienced movers’ understandings and conceptualisations of empathy. These research questions build on theories of ‘automaticity’ (embodied simulation) and ‘plasticity’ (ability to alter existing processes) of bodily and brain networks implicated in action and emotion understanding. From the findings presented in this thesis kinaesthetic empathy emerges not

only as an innate capacity to relate and feel with an other but also as a potential intervention towards cultivating greater embodied resonance within intersubjective encounters. The interdisciplinary methodology applied in this investigation unpacked kinaesthetic empathy both through sociological contextualisation (embodied practice and phenomenological approach) and scientific reductionism (EEG). Each approach offered a distinctive vantage point into the complex workings of kinaesthetic empathy and complemented the limitations of each disciplinary approach (Jola et al, 2012). Scientific reductionism allowed me to dissect embodied interaction to its constituent parts in order to examine inaccessible (through observation or introspection) aspects of KE, namely brain activation during live movement processing. On the other hand, the sociological contextualisation approach considered KE in holistic, phenomenological and embodied terms. In the two sections below I combine the two paradigms to draw some concluding interpretations of kinaesthetic empathy, as developed through this research project.

8.1.1 Kinaesthetic empathy as innate capacity

Broadly speaking, the research findings reveal that kinaesthetic empathy was experienced and conceptualised by all participants regardless of their group membership or prior experience in embodied practice. Kinaesthetic empathy was equally observed in the audience-performer post-show reflections. The shared, but not neutral, experience of kinaesthetic empathy articulated through participants' life-world accounts, points to our innate capacity to understand, feel with and relate to others at a non-verbal and kinetic level. This notion is aligned with Gallagher's (2008; Gallagher & Payne, 2014) theorisation of embodied cognition as the enactive basis from which our (relational) experiences stem from. In other words, not only are bodies made for action and environmental navigation, they also form the nexus of our cognitive and affective experiences. Gallagher's ideas are against the prevailing hegemony that cognition, affect and experience are a product of our central nervous system.

The enactive premise of KE is illustrated via participants' embodied and affective resonance (experienced in relationship) through such experiential processes as kinetic attunement and mirroring; also described as 'being moved (by an other)' in the audience-performer relationship. Participants consistently commented on the self-other overlap they experienced during the shared experience of movement (non-verbally) and then through their

reflective and dialogic meaning making (verbally). This verbal/non-verbal continuum, a cornerstone within DMP practice, bridges pre-reflective or affective experiences with ‘higher order’ cognitive processes involved in perception and understanding. Participants’ observed sensorimotor activation during relational movement processing, within a live interaction situation, also indicated to part of a distributed system that likely contributes to this self-other overlap. Gallese (2003) posits that physical, visual and social components of movement processing inform our empathic responses at a neuronal level (Gallese, 2003). His ‘shared manifold of intersubjectivity’ hypothesis places action understanding at the centre of human social interaction (Gallese, 2003). Guy Claxton (2015) describes our ‘bodily-kinaesthetic intelligence’, as the fundamental bodily capability from which other aspects of intelligence (e.g. emotional and mathematical) stem from. In this research project, both experienced and non-experienced movers, as well as audience members, were able to ‘tap into’ their kinaesthetic sense during movement processing (through observation, performance or relational processing) in order to understand, or come close to, the experience of another. Equally, participants reported feeling more ‘seen’ when others were able to meet them at a non-verbal, kinetic level.

The experience of kinaesthetic empathy as formulated through the research findings, is situated within an intersubjective field of relating. Intersubjectivity recognises bodies as subjects, mutually shaping (others) and shaped (by others) in relationship. This bi-directionality (Gallese, 2006) is evidenced in this study both explicitly (through participants’ verbal accounts) and implicitly (through the observed sensorimotor activation during live movement processing). Finlay (2006) describes intersubjectivity as a dynamic dance between ‘intimacy and alterity’; our ability to be at once open to the Other but also grounded in our own bodily Self. In 8.4 To Empathise or Not to Empathise? That is the Question (pp. 213-214) I expand on the relevance of empathy within theories of intersubjectivity, conceptualised as an ‘iterative and dynamic process’ (Finlay, 2006). It is due to this iterative and dynamic process that kinaesthetic empathy is also framed as ‘acquired knowledge’ in this study as discussed below.

8.1.2 Kinaesthetic empathy as acquired knowledge

The findings presented through this investigation suggest that embodied (relational) resonance can be cultivated over time. Specifically, this research project has shown that

familiarity plays an important role in our experience of kinaesthetic empathy. Research participants were more likely to experience empathic responses after they had established a relationship with another person. This finding was true not only for the Lab participants (NHS clinicians and DMPs) but also picked upon by audience members and performers within the live dance theatre context. Beausoleil and Lebaron (2013) explain the neurobiological factors implicated in our experience of familiarity:

When one feels under stress, threat, or shame, th(e) autonomic nervous system is unconsciously triggered to increase the body's production of adrenaline and cortisol, which limits blood flow to the frontal lobes of the brain. When this happens, access to thinking functions or previous knowledge is limited, and it is more difficult to remain receptive to unfamiliar people or ideas...

p. 137

The role of familiarity in the experience of kinaesthetic empathy extended to participants' motoric fluency. For example, experienced movers (DMPs and dance practitioners) showed greater differentiation between the movement conditions (drawing from Laban Movement Analysis and mirroring) introduced during the EEG testing at the 'before' time point, compared to non-experienced movers (NHS clinicians). It appears that trained-movers' 'expertise' in disentangling different movements at a physical/kinetic level was also represented in their brain activation during the EEG testing. This finding attests to the substantial neuroscientific evidence of stronger internal simulation in 'expert' movers, which in turn is associated with emotion processing and social interaction (Beausoleil & Lebaron, 2013; Calvo-Merino, 2005; 2006). This variability in different participants' motoric resonance, before the intervention, was echoed in the way they language their empathic responses. For example, Studio Lab participants (trained-movers) used a more specialised movement vocabulary to describe their relational embodied experiences compared to the NHS Lab group. Interestingly, no significant differentiation of movement conditions was observed between the two groups after the intervention. It may be suggested, that the non-experienced movers' acquired (embodied and visual) familiarity (Jola et al, 2012; 2011; Calvo-Merino et al, 2005; 2006), gained through the embodied practice intervention, cultivated participants' embodied resonance with the movement conditions. Furthermore, it may be suggested that, building on their innate capacity to empathically interrelate through movement, NHS Lab participants maximised their embodied resonance capabilities during the embodied intervention, which subsequently brought them into an 'even keel' with the (previously) 'expert' movers (Studio Lab participants) by the end of the study. This is not to

suggest that participants' experiences of kinaesthetic empathy were 'identical' as each group, and each individual within that group, brought their own eco-socio-embodied systems (Claxton, 2015) in relationship.

Further evidence in support of the conceptualisation of kinaesthetic empathy as acquired knowledge is evidenced through the consistent EEG finding of greater sensorimotor activation observed across participants and experimental conditions after the intervention. It may be argued that the significant increase in sensorimotor activation observed after the intervention confirms one of the initial hypotheses that embodied resonance may be cultivated over time through embodied practice (or training). Taken together, the above conceptualisations of KE as 'innate capacity' and 'acquired knowledge' may be considered towards introducing embodied socio-political interventions within healthcare and social contexts (i.e. dance theatre among others).

8.1.3 Broader socio-political implications of kinaesthetic empathy

The non-neutrality of embodied interrelating is found in participants' multiple conceptualisations of kinaesthetic empathy based on context, environmental impact and socio-political dynamics. For example, NHS Lab participants readily associated their experiences within the embodied practice focus groups to their clinical work experiences making links between client, environmental and professional role material. They associated their relational experiences in the Lab to such healthcare concepts as 'duty of care', 'care plan approach' and 'treatment pathways'. The clinical locale of the NHS Lab fieldwork grounded clinicians' individual and team experiences of embodied empathic relating within the work setting. Similarly, it may be argued, the educational setting used for the Studio Lab fieldwork (University of Roehampton), and the fact that the group comprised a combination of DMP practitioners and dance artists, focused the embodied explorations on participants' here-and-now interpersonal engagement. As a result, Studio Lab participants made less references to clinical material compared to NHS Lab participants. I am reminded here of Orbach's (2016) claim that different forms of embodiment encode social distinctions. I would add that the reverse is true as well: social distinctions (in this case found in healthcare and educational contexts) encode our multiple experiences of embodiment.

One of the outcomes resulting from the completion of the research study within the Mother and Baby Unit (where the NHS Lab group took place), was the introduction of a

‘Creative Approaches to Reflective Practice’ staff group. Recognising the usefulness of embodied practice in team building and learning, the unit manager invited me to facilitate a six-month Reflective Practice pilot utilising, predominately, experiential and embodied approaches. Reflective Practice is used extensively within healthcare contexts supporting service development and continuous professional development for staff members. Up to that point Reflective Practice had been facilitated by the ward psychologist inviting the multi-disciplinary team to address emerging clinical issues through verbal discussion. For the first time the multi-disciplinary team was given access to an embodied space where clinical issues could be unpacked kinetically, experientially and creatively. The details of this pilot project are outside the parameters of this investigation and will not be discussed further. However, it is important to draw attention to the utilisation of kinaesthetic empathy as intervention in this (healthcare) context. I am led to think that, in the context of the NHS Lab group, (learning through) *movement* (participation in the study) brought about *action* (Reflective Practice group) which in turn brought about whole body *integration* (bridging experiential learning with verbal reflection).

Thinking through movement (Sheets-Jonhstone, 2009) is embedded within the pedagogical and clinical framework of Dance Movement Psychotherapy. In recent years the moving body has been introduced in different healthcare contexts (Nunes Tucker & Price, 2010; Wilson, 2014) in an attempt (not necessarily self-consciously) to re-humanise the object-body embedded within the medical model (Knight & Bradfield, 2003). Similarly, Ken Robinson (2006) views creativity as equally important as literacy and warns about the risk of cultivating disembodied education systems (Robinson, 2006). Likewise, Joelle Aden (2014) advocates ‘theatre education’ towards an ‘empathic society’ by integrating physical, emotional and aesthetic simulation to support the “acquiring [of] an empathic attitude” (p.1) within the learning process. Movement and dance have also been considered as constructive mediums in conflict resolution particularly in their transformative potentiality for relationship building, perspective taking and negotiation (Beausoleil & Lebaron, 2013) and towards the recovery from trauma (Harris, 2007).

The cultural and environmental factors shaping our development, learning and health are many and important. The turmoil many communities are experiencing across the world, involving repeated acts of brutal violence instigated by hate, bigotry and marginalisation (of the different Other), attests to the urgency for cultivating embodied socio-political interventions at both grassroots and policy level. Orbach (2016) calls for challenging our

work places, “co-opted [as we are] in a system that fails us” (Embodying Social Justice Conference), in order to develop ethical and just practices. For example, ongoing interrogation of how DMP, and broadly speaking the arts therapies, may co-exist within dominant medical discourses, environments and systems (Allegranti, 2015) is an important step in this direction. Kinaesthetic empathy may play a crucial role towards this end:

We think about the world in all the ways that we experience it. We think visually, we think in sound, we think kinaesthetically. We think in abstract terms, we think in movement....In fact, creativity - which I define as the process of having original ideas that have value - more often than not comes about through the interaction of different disciplinary ways of seeing things.

Robinson, 2006

It is worth considering Robinson’s idea of seeing things through ‘different disciplinary ways’ in troubling dominant clinical and social contexts. In the case of this research project, for example, it is worth noting that the majority of research participants were female (at a ratio of 11:2). This gender imbalance, embedded in the research sample, was mainly driven by the specific systemic contexts of the two participant recruitment sources: DMP and a Mother and Baby Unit. Both DMP as a profession and the Mother and Baby Unit (as a clinical service) are female dominated. This phenomenon arguably raises questions about dominant views on the relevance of femininity and masculinity in the context of both DMP and the Mother and Baby Unit. For example, why is dance movement psychotherapy a mostly ‘female’ profession and why is mother and baby care delivered by women predominately? Interestingly if we consider the cultural balance between research participant groups, the NHS Lab group presented with greater cultural diversity compared to the Studio Lab group. These specific socio-political contexts are embedded within the formulation of kinaesthetic empathy as presented in this research thesis. This observation further attests to the non-neutrality of empirical discourse.

So far in this discussion, kinaesthetic empathy has been conceptualised as innate human relational capacity, as a skill that can be cultivated in practice and as a potential socio-political intervention in health and socio-political contexts. I now turn to the psychotherapeutic and performance intersections of the dancing body as implicated in the experience of kinaesthetic empathy.

8.2 The Dancing Body: Psychotherapy and Performance Intersections

It is arguably self-evident to state that, historically, the roots of dance movement psychotherapy practice are found in the expressive and creative properties of dance as an art form. Yet, this vital link between dance as art and dance as therapy has become a contested view in recent years. DMP is the only arts therapy with multiple title variations used by different schools of practitioners, such as ‘dance movement psychotherapy’, ‘movement psychotherapy’ and ‘dance/movement therapy’. Where art, music and drama therapies have sustained a unified representation of the ‘arts therapies’, as an umbrella term spanning a diverse clinical field (also sharing the same regulating body of Health and Care Professions Council), DMP maintains an arguably ambivalent relationship with its own artistic identity. A further division within the DMP profession involves views of the body stemming from somatic psychology approaches such as ‘body-oriented psychotherapy’ and ‘body-mind centering’. One could speculate as to the reasons why dance has become such a contentious term within the field of dance movement psychotherapy. The confluence of diverse creative, somatic and psychotherapeutic approaches utilised in DMP, inform clinicians’ views of the relevance of dance as a key component in the therapeutic process.

Similarly, it may be argued that within dance scholarship and pedagogy conflicting views of dance’s psychology co-exist. Dance, this malleable performing art form, exists within (and is defined by) cultural, historical and political contexts. The various categories of dance forms in existence (i.e. classical ballet, contemporary, dance theatre, physical theatre) are based on multiple aesthetic, stylistic, technical and expressive distinctions. Even though dance theories of ‘dance consciousness and cognition’ (Warburton, 2011) have been in development since the 60’s (Sheets Johnstone, 1966) and ambitiously pursued through emerging interdisciplinary research (Calvo-Merino et al, 2008; Jola et al, 2012; McGregor et al, 2013; 2015; Sperling et al, 2016), I argue that the philosophical implications of the dancer’s subject-body are under-examined in practice. For example, a view that conceives the dancer’s body as a ‘vessel’ through which the artist’s (choreographer) artistic vision may be expressed endangers the marginalisation of the performer’s lived experience.

Looking back at my own experience in dance training and education I realise, with incredulity, that I was only able to reconcile my affective experiences as a dancer with the aesthetic demands of technical training 18 years *into* my intensive dance practice. Within my

classical training in ballet technique as a young dancer, I was taught to perceive my moving body as an instrument for displaying shape, form and grace, whilst striving to fulfil a weightless aesthetic driven by high technical ability, precision and athleticism. I distinctly remember the stinging pain of my bleeding toes as I danced ‘en pointe’, and my determination to ignore this physical ‘distraction’, as I prepared for my vocational examinations. Later as a ballet teacher, I too encouraged students to work their way through pain and discomfort faithfully observing the embedded abstraction of the body-subject within the pedagogy of ballet technique. As I expanded my dance vocabulary through contemporary dance training, I discovered a different kind of body connectivity with gravity becoming integral to my kinetic experience of falling, rolling and spiralling. However, even within this seemingly freer dance form I was constrained by technical norms that remained unchallenged. Therefore, whereas my ‘Graham body’ (after Martha Graham dance technique) contracted and released through a series of exaggerated (for dramatic effect) contortions, my ‘Cunningham body’ (after Merce Cunningham dance technique) strived to be neutral, emotionless and abstract, unadorned by expression or dramatization. It was not until my final year research project as an undergraduate student that I was able to question the notion of authorship within dance performance and choreography, through my investigation of ‘dance improvisation as performance’. It was also during my final undergraduate year at university that I discovered DMP and a further paradigm shift happened for me through such notions as ‘moving from within’, ‘seeing and being seen’ and attuning to my ‘felt sense’.

The above anecdotal background offers a preamble to the next sections, where I consider the cross-fertilisation between DMP and dance (as a performing art form) highlighting what each field can gain from the other. In particular, I consider dance performance within the therapeutic context of DMP and argue for the integration of phenomenological views of the dancer’s lived body in an attempt to re-humanise regimented traditions in dance pedagogy. In the context of this discussion kinaesthetic empathy is viewed as the bridge between dance as a therapeutic intervention and dance as an art form.

8.2.1 Dance performance as a therapeutic tool in DMP

Dance’s potential to bring about change through the transformative experience of artistic expression was realised by early DMP pioneers in the 50’s and 60’s. In this section I argue for re-claiming the artistic basis of DMP (Allegranti, 2015) by acknowledging the

creative and expressive capabilities of moving-bodies-in-relationship. I suggest that it is this creative and expressive activation of embodied relational exchange that supports the therapeutic relationship and meaning making in the practice of dance movement psychotherapy.

Dance activity may be deconstructed in the following three integral components: movement phrasing (linking individual actions into a sequence of movements), choreography (the composition of different movement sequences into a coherent piece) and performance (the communication of the composed piece to an observing audience). In the first instance, movement phrasing supports spontaneous expression and improvisation through which, the mover is able to think, express and experience herself kinetically (Sheets-Johnstone, 2011). This process of experimentation, also described as ‘creative process’, is a fundamental component within DMP practice and pedagogy. In the same way that a professional dancer uses her body as her primary method for communication, so does the DMP clinician use embodied practice to support a client’s (or group’s) creative exploration of psychological material. Through the process of piecing together the created movement sequences into a choreographic piece the mover formulates a thematic idea, thus languaging her story through movement. In DMP this process allows the client to contain her psychological material within the artistic ‘product’, and thus gain reflective distance during the meaning making process. The experience of dance performance in front of an audience is akin to the psychotherapeutic process of ‘seeing and being seen’ (Allegranti, 2015). Furthermore, the notion of performativity, or what Allegranti (2015) describes as ‘doing’, ‘undoing’ and ‘re-doing’ allows the client to articulate, represent and review their psychological process in relationship. The performed dance therefore, becomes the mover’s living inscription, relational text, or ‘palimpsest’ to use Allegranti’s (2015) term.

Within this research project dance improvisation informed both the data collection stages and the dissemination of findings. Participants (of both experienced and non-experienced groups) explored movement phrasing and improvisation during their investigations of kinaesthetic empathy within the embodied practice focus groups. The experienced-mover group further developed themes of kinaesthetic empathy into a choreographic piece performed in front of a live audience. The transformative experience of the live ‘performance journey’ was articulated by performers and audience members alike. Moving (literally speaking) the embodied research process beyond the studio space and into a

wider public platform (theatre) created a context for dance as social intervention (Allegranti, 2015) in this investigation of kinaesthetic empathy.

The rapid development of interdisciplinary investigations into the motoric, psychosocial and cognitive properties of dance movement (Berrol, 2006; Calvo-Merino et al, 2005; 2008; Jola et al, 2012; 2011, McGregor et al, 2013; 2015; Sperling et al, 2016; Allegranti & Silas, 2014; 2016) in the last decade, points to an important paradigm shift within arts and science research. At the centre of this evolving landscape, are neuroscientific theories of the mirror matching mechanism involved in empathy and intersubjectivity (Gallese, 2009; 2003). Neurological underpinnings of mirroring in DMP have only recently started to be examined empirically (Allegranti & Silas, 2014; 2016, Behrends et al 2012, McGary & Russo, 2011). As outlined throughout this investigation, both empathy and intersubjectivity are rooted in our moving expressive bodies. Furthermore, this research contextualises kinaesthetic empathy – an intersubjective psychosocial phenomenon – as the bridge between lived (affective) experience and social cognition. Our ability to understand, and feel with an other, through movement processing is made particularly explicit through dance as an art form and as therapy. The findings presented in this thesis build on the case for embodied cognition and body-mind connectivity as illustrated by the phenomenon of kinaesthetic empathy.

8.2.2 The lived experience of dance performance

Within the live dance theatre performance of |mu| an intentional phenomenological stance was embedded in the composition of the performance material. The choreographic work was based on experiential tasks which invited performers to construct and communicate the unfolding performance material in reciprocal co-creation with the audience members. In this sense, each performer became an author and narrator of their unfolding intersubjective story.

The lived experience of dance was particularly revealed during Geoffery's solo performance within |mu|. After a highly energetic solo section involving embodied improvisation on a personal theme (which was termed as 'pathway' within the creative process), Geoffery had been instructed to find a way to pause, by way of completing this section. During the rehearsals, I was struck by my intense kinaesthetic resonance with Geoffery's attempt to find stillness. I noticed the pulsations of his body, his rising and falling

chest as he gasped for air and the sweat running down his forehead. As I witnessed the slowing down of his breath, I became aware of my own breath and felt my body sway with his. I wondered how Geoffery made sense of his physical, sensory and kinetic experience (of trying to find stillness in his body), so I asked him to narrate this as he lived it in the moment. As Geoffery started speaking his kinaesthetic experience new layers of resonance formed in my dialogic relationship with him. Interestingly, every time Geoffery performed this solo in rehearsal a different story (and meaning) was created. Rooted as it was in his present-moment kinetic experience, Geoffery's solo transformed from one rehearsal to the next, and during the two live performance situations (private sharing for an audience of 10 guests and public performance for an audience of 80 people).

Geoffery's solo acknowledged him as a living experiencing and relational individual rather than as an abstract vessel for the choreographic material. Audience members specifically reflected on this section as the one that had stayed with them the most, due to their resonance with Geoffery's articulation of his lived experience. An additional example of kinaesthetic resonance, within the performance, between performers and audience members involved the audience participation sequence. Audience members provided responses to questions posed by me (via the dancers) before the performance began. During a designated moment in the piece, performers were instructed to move their response to the answers given by audience members. Neither I nor the performers, or the audience members for that matter, could 'know' how this experiential moment would unfold before it came to pass in the actual performance. Thus, the audience stories told during the performance of |mu| were co-created through dialogic reciprocity between the mover, audience member and researcher.

These examples attest to the potential for breaking down hegemonic barriers embedded in theatre traditions that place the dancer in the role of the entertainer and the spectator in that of the entertained. Allegranti (2015) reminds us that psychological change is possible outside the therapy room. In other words, dance becomes a social intervention when attention is given to the kinaesthetic phenomena unfolding in the dynamic exchange between performer and audience member. As Pina Bausch claimed:

To understand what I am saying, you have to believe that dance is something other than technique. We forget where the movements come from. They are born from life. When you create a new work, the point of departure must be contemporary life - not existing forms of dance.

Goodreads

Thus the common ground between DMP and dance performance is not only embodied practice but more specifically kinaesthetic empathy: the experience of sensing with another through movement. Experience goes beyond language. The moving body transcends barriers of communication.

A meeting point between artistic and therapeutic applications of dance exists in healthcare under the umbrella term Arts in Health. Artists and community organisations collaborate within different healthcare contexts to support vulnerable populations' wellbeing through the arts. I suggest that a mutual recognition between artists and therapists is necessary so that the full spectrum of a person's lived experience may be acknowledged and supported in practice. In a recent successful study into ballet for Parkinson's disease (Houston & McGill 2013) the researchers outline their research methodology as an 'artistic project' rather than as 'therapy'. Alongside the physical and mobility changes observed in participants, after attending a 12-week dance programme, Houston & McGill (2013) reported additional qualitative changes in participants' wellbeing. For example, participants reported feeling lonely, stressed or struggling with mental health prior to participating in the research study. The observed changes in participants' wellbeing were viewed as positive outcomes emerging from the dance intervention and they were specifically analysed within the parameters of 'catharsis' and 'social interaction'. Bearing in mind (and body) the many neurophysiological, cognitive and emotional challenges a person living with Parkinson's experiences, the absence of psychological consideration of dance and movement appears simplistic, if not ambiguous.

This marginalisation, or compartmentalisation of human experience, endangers a division between the arts and sciences. I argue that an open dialogue between arts therapies and arts practices is needed to address taken for granted views of wellbeing and recovery. Kinaesthetic empathy may offer common ground for dialogue and collaboration in supporting vulnerable populations in community and healthcare contexts.

8.3 Embodied Reflexivity: MODEs of interaction

Dance Movement Psychotherapy informed the experiential process of the investigation grounding the fieldwork (focus groups) on embodied practice. Building on the psychotherapeutic paradigm of DMP the experiential loop implemented in the workshops

included: movement exploration (i.e. through movement improvisation), observation (witnessing others) and non-verbal and verbal reflection (i.e. writing and talking). Building on existing experimental studies of action execution, performance and observation the following interactive conditions were utilised during the EEG testing: performance, observation, imitation and dialogic processing (a specially adapted condition to account for live embodied interaction). Phenomenological questioning underpinned the experimental and experiential components of the project. Specifically, the phenomenological framework of reflection supported the meaning making process of participants' life-world accounts.

Taken together the above 'conditions' allowed participants to *move* between different perspectives as they explored and/or constructed their understandings of kinaesthetic empathy. As discussed throughout this thesis, these different ways of relating, that participants were invited to explore, were informed by neuroscientific and psychotherapeutic views of embodiment and how it might be realised in the body and brain. In an attempt to embody these interdisciplinary positions in practice I offer an experiential example, I consider as *Embodied Reflexivity*, which I will now describe in detail. This experiential was facilitated as part of the fieldwork process, within the embodied practice focus groups. Beyond this research project, I have facilitated this exercise as a practical illustration of kinaesthetic empathy in different contexts, such as presentations, seminars and training events for students and members of staff.

Working in pairs participants adopt a 'mover' and a 'witness' position respectively. Stage 1: The mover embodies a 'sculpt' (bodily shape using whole body) witnessed by her partner. The pair stays in this silent exchange for a few moments. Stage 2: Mover and witness 'come out' of the situation and reflect on their responses (from their respective positions) on a piece of paper. Their responses may capture feelings, sensations, images, curiosities, metaphors. Participants are invited to use free association, prose or drawing to capture their reflections. Stage 3: Now the witness embodies her partner's 'sculpt' while the original mover adopts the witness position. The aim here is not to 'get it right', by representing the perceived bodily shape exactly as it was, but rather to develop an understanding of the essence of the perceived expression. In a literal way participants are invited to embody each other's perspective. Stage 4: Once the allocated time has lapsed participants 'come out' of the situation again and return to their paper to capture their new 'in-sights' (things we can know from within a given context and embodied situation). Step 5: Participants engage in verbal dialogue comparing notes and perspectives on the information gained from shifting between

experiencing, mirroring and observing. The exercise is repeated from the beginning with the pair now swapping their original mover-witness positions.

Through my experience of facilitating this exercise for different groups, and in different contexts, I have come across three key participant responses: (i) feeling closer to an other's lived experience by 'stepping into their shoes' mediated by the process of enactment, (ii) developing awareness around assumptions made from the initial observer position and (iii) understanding an other is a process, here pieced together by the reflexive loop of embodiment-reflection-dialogue. Breaking down the above practical illustration further, four distinct *MODEs of Interaction* may be discerned. I use the term 'mode' as an acronym for the four components identified in the Embodied Reflexivity example: Mirroring, Observation, Dialogue and Experience. These concepts have been discussed throughout this thesis and are summarised below with reference to this integrative example of kinaesthetic empathy.

Experience encapsulates embodiment and exploration: I embody, I move, I enact, I experience myself kinetically and kinaesthetically in reciprocal interaction with another. Unlike verbal psychotherapists Dance Movement Psychotherapists use movement as part of the therapeutic process and relational exchange. Observation, or witnessing as often described (after Authentic Movement see Pallaro, 2007), is used in multiple ways in the clinical practice of DMP. The therapist uses movement observation utilising different movement analysis tools, such as Laban Movement Analysis (Guest, 2005), Kestenberg Movement Profile (Kestenberg et al, 1999) and Bartenieff Fundamentals (Hackney, 2002) to gain insight into the client's embodied material. She also uses observation to 'hold' the therapeutic space for the client cultivating a process of 'seeing and being seen' (Allegranti, 2015). Mirroring involves a process of attuning to the clients' material by matching, echoing or amplifying the presenting movement expression. Unlike mimicking or imitation the therapist facilitates the act of mirroring as a bridge of understanding in the therapeutic process and as a process of recognition and validation of the client. Dialogue supports the meaning making process and integration of verbal/non-verbal material in the session.

A potential criticism to this proposed 'model' of kinaesthetic empathy (as mediated by DMP theory and practice) is that embodied relational process is considered through stillness. However, movement does not cease in stillness (Gray, 2012). In addition, participants' transitions from one position to the other also involved a *moving through* the different perspectives, a key paradigm embedded within DMP. For the purposes of

simplicity, the aim of the experiential is to consider the workings of kinaesthetic empathy through a ‘snapshot’ of embodied interaction. The experiential can be developed to incorporate whole body movement. During a participatory workshop I led during the Embodied Research Methodologies Symposium (Rova, 2014) I invited participants to shift between the different MODEs of Interaction using whole body improvisation. Another objection to this exemplar of kinaesthetic empathy may be that, as already articulated in multiple contexts throughout this thesis, it is not actually possible to separate one ‘modality’ from the other. For example, mirroring involves observation, experience and dialogic processing; experience encompasses mirroring, observation and dialogic processing and so on and so forth. Indeed, most participants exploring the MODEs of Interaction in practice reflected on the embedded inseparability of these embodied perspectives. All modalities exist and co-influence each other simultaneously.

A key purpose of this investigation has been to apply kinaesthetic empathy in and as practice. The attempt to disentangle the different threads involved in embodied practice is not in order to create a fixed ‘manual’ of kinaesthetic empathy. Embodied Reflexivity: MODEs of Interaction is proposed as a potential platform for applying insights gathered through this interdisciplinary investigation in practice. As already discussed through the findings of this research project, kinaesthetic empathy can be developed in practice. Drawing from the different contexts within which I have applied this model of Embodied Reflexivity I propose that embodied relational and creative approaches applied in practice may support learning (Robinson, 2006), perspective taking (Knox, 2014) and team building (see Reflective Practice Outcome discussed in 8.1.3 p. 199-201). In addition, ‘linguaging’ embodied process within psychotherapeutic contexts, including its implications for therapeutic (and by extension social) change, is an important contribution towards theorising the moving relational body.

8.4 Minding the (Moving) Body

In recent decades there has been a considerable shift within healthcare and psychotherapeutic literature through the recognition of embodiment as an important component within therapeutic practice. Theories that consider body’s influence on the mind and vice versa are mostly contextualised as ‘mindful’. Mindfulness practice derives from Eastern philosophies and more specifically from Buddhist and spiritual meditative practices. Traditional mindfulness-meditation is located within a larger cultural context and set of

spiritual practices compared to Western interpretations of the approach (Keng et al, 2011). Medical and psychological conceptualisations of mindfulness associate it with psychological wellbeing based on the cultivation of awareness and acceptance of one's experience in the here-and-now (Keng et al, 2011). A recent review of empirical studies on the efficacy of mindfulness-based interventions, including EEG studies developed from the 70's onwards, reports that positive outcomes are associated with a reduction in indicators of physiological arousal (Keng et al, 2011). Aspects of mindfulness-based interventions have been incorporated in manualised form within diverse psychological treatments, such as mindfulness-based cognitive therapy, dialectical behaviour therapy and acceptance and commitment therapy, for depression, anxiety and chronic pain among others (Brown et al, 2014). However, fewer studies have been published within a psychiatric context, due to the potential adverse effects of meditation practice on patients' psychotic symptoms (such as auditory or visual hallucinations). A recent study tested a mindfulness-based intervention towards the reduction of anxiety in fifteen patients diagnosed with schizophrenia (Brown et al, 2014). According to the authors meditative exercises included mindful breathing and eating, body scan and gentle yoga exercises. Even though positive outcomes included self-awareness, relaxation and cognitive shifts (focused thinking, new ideas) participants reported experiencing difficulties in engaging with some of the cognitive tasks, physical limitations and social anxiety.

Alongside mindfulness, within psychotherapy practice the body has emerged as 'a new theoretical movement' (Confer, 2016). According to Confer, a high profile independent psychotherapeutic Continuous Professional Development organisation, "(t)he special relevance of the embodied mind concept to psychotherapy is that the raw materials of therapy - affect and relationship - are seen as located in the body, which is thus central to the therapist and client's experience and therapeutic process". (Confer, 2016).

Even though these approaches bear resemblances with the practice of DMP, through the recognition of embodied process as central to psychological treatment, there are significant departures between their theoretical conceptualisations and practical applications. Mindfulness-based interventions rely on manualised treatments, which (as discussed elsewhere in this thesis) do not correspond with the creative and co-created perspective of DMP. Mindfulness-based therapies also frame bodily awareness as a process of introspection rather than within a relational context. On the other hand, embodied approaches to psychotherapy, as described by Confer for example, situate the body in relationship in a

similar approach to that used in dance movement psychotherapy. However what both these approaches seem to disregard completely is the kinetic potentiality of bodies in relationship. In other words, whereas mindfulness-based therapies and verbal psychotherapies concern themselves with bodies, dance movement psychotherapy considers moving bodies in relationship.

I argue that failing to acknowledge the role of movement in relationship, risks abstracting the body as a background framework for mind's activities and 'achievements'. Through this investigation of kinaesthetic empathy I have emphasised the difference between embodied approaches *in* practice and embodied approaches *as* practice. Whereas theories of embodiment may inform broad psychotherapeutic practices at a philosophical level, applying embodied, and crucially kinetic, approaches as part of psychotherapeutic treatment interventions is, arguably, specific to DMP practice.

Embodied perspective taking (Parker & Best, 2005; Best, 2005), kinaesthetic intersubjectivity (Allegranti, 2015; Samaritter & Payne, 2013) and movement as metaphor (Meekums, 2012) are some distinct theorisations of the embodied relational body emerging through the practice of dance movement psychotherapy. I argue that the growing visibility of bodies in psychological and psychotherapeutic contexts will remain incomplete unless the communicative, expressive and relational foundations of movement are also recognised.

8.5 To 'Empathise' or Not to 'Empathise'? That Is The Question

Kinaesthetic empathy was chosen as the crux of this investigation due to its prominent position in the theory and practice of dance movement psychotherapy. However, in recent years theorists have shifted from the assumed one-sided focus of *empathy* to the bi-directional potentiality of *intersubjectivity*. Therefore, one is more likely to encounter terms such as embodied intersubjectivity or kinaesthetic intersubjectivity in current literature around social and psychotherapeutic interaction. In this section, I briefly tackle the question of empathy's relevance in current clinical and socio-political contexts drawing from the emerging interdisciplinary conceptualisations of the research project.

Intersubjectivity emerged as a component of kinaesthetic empathy within the qualitative findings of this investigation and was inferred experimentally through participants' sensorimotor activation during live movement processing. Qualitatively it was

found that intersubjectivity incorporated the following four relational aspects: (i) subjectivity, (ii) co-creation, (iii) similarities and differences and (iv) dialogic process. Through the EEG testing it was found that participants' embodied processing developed over time pointing to the importance of social and motoric familiarity within intersubjective interaction. In summary, kinaesthetic intersubjectivity recognises that subjective experience is co-created in reciprocal recognition of the similarities and differences encountered in our dialogic relationship with an other. Intersubjectivity therefore, presupposes the equal 'status' of two (or more) subjectivities involved in the dialogic process. This is an egalitarian view of embodied relating and a foundation from which our (relational) meaning making can emerge.

Another qualitative finding involved the socio-political dynamics participants identified within their relational processing of kinaesthetic empathy. Participants conceptualised socio-political dynamics across four key areas: (i) power and control, (ii) responsibility, (iii) culture and (iv) environment. Participants articulated their empathic responses within clinical encounters informed by their authoritative positioning (as clinician or therapist), their sense of responsibility towards their patients' wellbeing and the cultural and environmental contexts within which those encounters unfolded. It may be argued, that in many clinical cases, one-directionality in the therapeutic relationship is embedded, especially within acute psychiatric contexts. Intersubjectivity then needs to be facilitated by the clinician, for example through supporting the client to explore perspective taking. In this sense kinaesthetic empathy, the feeling with an other through relational movement process, may cultivate intersubjective understandings co-created in relationship.

Kinaesthetic empathy is not only relevant within the therapeutic relational exchange. Participants reflected that exploring kinaesthetic empathy in practice gave them insight not only in their experience of others but also in their experience of their (embodied) self. During the Reflective Practice pilot I run in the Mother and Baby Unit (following the research fieldwork I completed within this setting), a nursery nurse (I will call Sophie) reflected on the impact her involvement in the 'rapid' team (shorthand for 'rapid tranquilisation') had on her wellbeing. Across the mental health hospital nursing staff, from all the wards, rotated their duty in the 'rapid' team, involving a designated group of clinicians called to respond to crisis and unfolding risk in the wards. Once the alarm was activated (rapid staff carried a bleep alarm on their person) the rapid team was expected to make their way to the location of the incident in minutes, in order to resolve the identified issue. That day Sophie had been called to respond to the restraining (through de-escalation and manual handling techniques) of a

patient who was being violent on the ward, so that their depot medication (injection) could be administered. On her return, Sophie resumed her duties as a nursery nurse in the Mother and Baby Unit. It was not until she came to the Reflective Practice session, where during an embodied exercise inviting participants to lie on the ground whilst a partner applied gentle touch on their shoulders, that Sophie realised she was ‘shaking inside’. Exploring this theme through embodied practice and discussion, Sophie reflected on how traumatic work experiences often caused her to disconnect from her body in order to ‘get through’ her shift. Sophie’s realisation sparked a group conversation on the importance of self-care for clinicians. In this vignette Sophie’s embodied reflection on the rapid tranquilisation incident allowed her to recognise her own lived experience and dialogically relate this to the experience of other members in the group.

Notably, throughout this research project, participants’ conceptualisations of empathy involved openness towards and recognition of another without merging with the other. I am reminded of Finlay’s (2006) theorisation of ‘degrees of empathy’:

Perhaps there is room for different versions (levels?) [author’s emphasis] of empathy involving varying degrees of identification, objectification and intersubjectivity. Sometimes we see ourselves in others while, at other times, we see others in ourselves. Sometimes we touch others and so understand something about our own objectivity which, if we reflect on it, may help us to better understand our subjectivity. At other times we are touched by others and so touch their subjectivity.

p. 8

According to Finlay (2006), embodied reflection mediated Sophie’s awareness of both her objectifying (experience of restraining a service user) and objectified (marginalisation of her embodied responses) self. The ‘antidote’ (touch) she received from a colleague not only ‘re-humanised’ her own body but also that of her client’s. Empathic response therefore, is a dynamic process or in Finlay’s (2006) words a ‘dance between intimacy and alterity’. It may be argued, that intersubjectivity is the field within which the dynamic experience of varied degrees of feeling with another (empathic resonance) is possible. For this reason, I propose that empathy continues to be relevant as a theoretical concept, particularly in those contexts where social interaction may be compromised due to atypical developmental processes and within contexts inherently presenting with power imbalance among the inter-relating individuals.

8.6 Interdisciplinary Investigation: Treasures and Pitfalls

An advantage of interdisciplinary research involves the potential for engaging with multiple perspectives and exploring integrative knowledge building emerging *between* disciplines. The value of interdisciplinarity extends to the possible cross-pollination between the different fields and approaches, as demonstrated throughout this thesis. Two examples of this exchange, manifesting within this research project, included the utilisation of movement improvisation during the EEG testing and the integration of embodied cognition theorisation within phenomenological explorations of embodied practice. Having access to multiple methodological lenses, in this case qualitative, quantitative and practice-based, allowed for a richer, and arguably more complex, data production. Throughout the research project, I have aimed for an impartial representation of each disciplinary perspective. However, as the sole researcher and author of this interdisciplinary work, I wonder if it is actually possible to avoid privileging DMP or phenomenology, given my disproportionate experience in these fields, compared to cognitive neuroscience.

A key conflict I experienced during my immersion in this research project involved ‘embodying’ the scientific lens. Whereas my engagement with DMP and phenomenology as part of this research deepened my existing understanding and experience in these fields, engaging with cognitive neuroscience theory and EEG testing was a completely new and a notably different experience. Not only did I need to assimilate large amounts of new information fast, I also had to apply them in practice at an equivalent level to the other two perspectives. Therefore, in this study interdisciplinary practice specifically involved the application of mixed methods and theories as opposed to the collaboration between multiple researchers. Jola et al (2012) describe their interdisciplinary collaboration as a phenomenological-neuroscience duet. Applying this example to the context of this research project, I (as the sole researcher) shifted between the phenomenological and scientific partner roles, at times embodying both perspectives at the same time. Nissani (1997) describes the interdisciplinary researcher as an intellectual ‘immigrant’, who makes a contribution to her field by traveling to ‘new lands’. In this sense, interdisciplinarity enabled me to discover new ground for knowledge production, but also constrained me, in terms of ‘how far’ I could go into this new land.

Some may consider my decision to marry psychotherapeutic and artistic approaches with EEG testing as an attempt to ‘gain validation’ from positivist models for the elusive experience of embodied process. However, utilising a neuro-imaging technique such as the EEG, allowed me to ask *different* questions about kinaesthetic empathy. For example, whereas qualitative enquiry empowered me to ask questions about participants’ experiences and meaning making process through language and movement exploration, experimental testing enabled me to pursue a different approach, by asking questions such as: ‘how does the motor cortex represent movement processing during exploration of DMP constructs?’ Most importantly, the exploration of brain processes can reveal something about experience and psychological phenomena unobservable by introspection or phenomenological explorations. By visiting a ‘new land’ (EEG) I have been able to make a different contribution to my ‘home land’ (DMP). Therefore, interdisciplinarity can expand the scope of research investigations and fields by promoting “the unity-of-knowledge ideal” (Nissani, 2010, p.201).

One of the key challenges in designing and setting up this research project involved the recruitment of participants. The research project required that participants volunteered their participation for a six-week period of investigations, which arguably involves considerable (time and travel) commitment. For the NHS Lab group participants also needed to factor in the added complication of their duty rota, making consistent engagement in the project difficult. From receiving ethical approval by the NHS Research and Development department, for a study that was originally deemed ‘non-clinical’, to managing scheduling, practical and space limitations, conducting research within a clinical setting proved very challenging. I argue that we need to interrogate how research into clinical practice is conducted. As I have discussed throughout this thesis, contextual, environmental and socio-political factors are embedded within the clinical relationship. Therefore, studies investigating therapeutic practices outside of relevant eco-socio-political contexts are arguably incomplete.

To date, there have been no empirical studies explicitly combining DMP and EEG. For this reason, a level of experimentation and imagination was required towards designing this novel interdisciplinary investigation. Part of the examination of kinaesthetic empathy drew from two key DMP approaches, namely movement analysis and mirroring. However, attempting to test the DMP conditions experimentally proved more challenging than anticipated. For example, the EEG apparatus and testing conditions limited movement to a very narrow kinesphere and prevented participants from using their head and face. These

limitations created an artificial relational context for participants. Even though participants were given specific guidelines regarding avoiding excessive movement, testing of the DMP conditions during the EEG experiment resulted in 18% of missing data.

In a similar vein, the choice to design my own research questionnaire, instead of relying on existing subscales (which measure empathic response) yielded different findings to those anticipated initially. Specifically, participants developed their conceptualisations of KE over time through an iterative process of reviewing and adding to their initial responses. Rather than using the questionnaire as a measure of empathy, I was interested in participants' developing views and understanding (meaning making) of empathy. Even though appropriate to the phenomenological questions asked, this approach contradicted the before-after design of the research questionnaire. It may be concluded therefore, that as the research questionnaire functioned as an exploratory tool in practice, it may have been more relevant to conduct the survey at the end of participants' overall engagement in this investigation. This is an example of how an initial research decision, here applying the before-after design of the EEG to the research questionnaire, transformed during the fieldwork in reciprocal phenomenological interaction with the research participants.

The challenges and pitfalls outlined in this chapter, point to gaps in knowledge production that may be further explored through research in the future. As outlined throughout this thesis, ongoing theorisation of the expressive and psychosocial properties of our relational moving bodies is essential if we want to avoid a dualist abstraction of the body as a mere backdrop for the mind. In addition, research studies that are situated within clinical contexts, investigating actual relational phenomena in practice, are necessary. This investigation sought to demonstrate that interdisciplinarity is a constructive way towards integrative theory building regarding human relational experiences. Rather than advocating a single 'truth', this research project proposed different possibilities in examining kinaesthetic empathy through psychotherapeutic, experimental and artistic approaches. Even though there is a promising interest in neuroscientific evidence within psychotherapeutic theory building, more empirical research into the neurobiological basis of DMP interventions is needed. Explicating the philosophical, scientific and aesthetic underpinnings of DMP will provide more clarity and influence towards the visibility and relevance of our profession within the 21st century.

Chapter Nine: Concluding Reflections

Dance, dance, otherwise we are lost

Pina Bausch

As I am writing this last chapter of my thesis, and whilst I look back at the four year trail of my research project, I am acutely aware of the historical and socio-political contexts within which this work has been created. Important world events have taken place within the four year period of this investigation on kinaesthetic empathy. From raging wars, to recurrent economic and humanitarian crises, natural disasters, outbreaks of resistant viruses, brutal terrorist incidents and violent displacement of communities, life on earth has been challenging. It follows that such global eco-socio-political pressures will further impact our day to day experience including our mental, physical and emotional wellbeing. Consequently our relationships (with ourselves and others) will also feel the strain as we adapt to the rapidly changing world around us.

Four years ago, I was embarking on my PhD study having performed in the London 2012 Olympic Opening Ceremony, as a volunteer in the NHS segment of the performance. During the performance, I remember looking out to the audience stands mesmerised by the 80,000 strong crowd, which formed a tight circle around the elevated performance stage. Glancing at the stadium screens, broadcasting the live event watched by millions across the globe, I imagined my family and friends looking on from different parts of the world. In that moment I experienced, what I considered at the time as, a powerful connection with humanity that transcended the confines of time, space, language, culture and social distinctions. In this amplified (and idealised) state of empathy and celebratory mood the whole world was coming together, in my view, through mutual recognition mediated by dance and music. This shared hyper-reality of the Opening Ceremony created the illusion of reconciliation, even for that fleeting moment. Members of the public spontaneously stopped me in the street, as I made my way home after the ceremony still wearing my costume, to embrace and congratulate me for my contribution. Four years on, this memory seems ironic in the wake of a splintering European Union referendum campaign in the UK. The fact that my immigrant status is now viewed, by a large portion of the UK population, as unwelcome or problematic brings an uncomfortable realisation: My relational embodied and empathic responses as a

member of my community have shifted dramatically. Our lived experiences are continuously shaped in reciprocal engagement with the world within which we live.

I make this socio-political (and autobiographical) detour to the background of my investigation in the last four years, as I wonder how this research project of kinaesthetic empathy fits into the bigger picture. I also wonder where this work can *move* onto next. This investigation was born out of my clinical practice as a dance movement psychotherapist. I began by asking how embodied practice might support clinicians' kinaesthetic (and therefore empathic) resonance with their clients' lived experience. Building on interdisciplinary advances I considered kinaesthetic empathy from psychotherapeutic, phenomenological and scientific lenses. Through the voices and experiences of multi-disciplinary research participants I offered a possible conceptualisation of kinaesthetic empathy as it emerged through relational embodied practice and experimentation. Coming full circle, I propose kinaesthetic empathy as a vital therapeutic contribution within clinical contexts. I also suggest that kinaesthetic empathy is not only an innate human capacity, which may be further cultivated over time, but it also acts as intervention within broader socio-political contexts (see healthcare, aesthetics and education).

Of course this research project is by no means all-encompassing or exhaustive. It does not conceive kinaesthetic empathy as a solution (or treatment) but rather acknowledges its relevance and potentiality within multiple intersubjective contexts. Whereas I began this investigation with an optimistic view on the importance of drawing attention to the experience of kinaesthetic empathy at a micro level, I find myself arriving at a more sceptical outlook about its implementation at a macro level.

As I have discussed throughout this thesis, relational experiences and understandings do not exist in a vacuum. Environmental and socio-political affordances at a macro level affect and shape our relationships at a micro level. In this sense, I wonder about the feasibility of cultivating embodied empathic understandings in healthcare without endorsement from clinical commissioners and the management tiers. For example, in my experience as a Secondary Care clinician (in the NHS) the PbR commissioning system allows me to treat clients who specifically 'fall' within designated funding clusters. However, as with human experience, mental ill health cannot always be reduced to neat boxes or categories. As a result, I have found myself interrupting therapeutic work with clients brought on by a change in their clustering (funding) status. In other words, my service actively prevents me from

empathically responding to my clients' enduring need for psychological support. Similarly, I wonder how General Practitioners may be supported to employ their (embodied) empathic skills within their limited 15-minute consultations (as dictated by policy). How can teachers engage students' imagination and embodied potential in learning if the education system privileges cognitive literacy above all else? More broadly, how can communities feel safe in (and therefore welcome) diversity if international politics are driven by alienation and division?

Perhaps interdisciplinarity is a form of reconciliation where division and fragmentation exists: "Interdisciplinary may help breach communication gaps in the modern academy, thereby helping to mobilize its enormous intellectual resources in the cause of greater social rationality and justice" (Nissani, 2010, p. 201). Similarly, dialogic and triangulation processes may form metaphors in perspective taking (in clinical and social contexts): "A dialogic process holds the promise of fostering a multifaceted and nuanced understanding of the conditions under which triangulation can capture the synergistic potential of mixed methods research" (Mertens & Hesse Biber, 2012, p. 78).

Throughout my research endeavour I was fortunate to receive consultation by a senior dance movement psychotherapist, who provided me with 'embodied holding' and a space for meaning making, in my role as primary investigator. During a recent session I explored my experience of 'reaching the end' through embodied improvisation and verbal reflection. Starting on one side of the room I began moving my way towards the designated 'end point' of my investigation. I pushed and lunged across the floor, occasionally turning to look back, keeping my focus to the point of arrival. As I got near the end my hands formed a concave shape in front of my body, as if holding or carrying something precious and yet fragile. As I found myself a mere step away from the end, I paused perplexed. Why was I not feeling the anticipated sense of achievement or, at least, satisfaction now the journey was finally coming to an end? I was filled with questions around validity, worth and making a contribution. It was as if the precious 'gift' I was carrying had evaporated from my hands. In an attempt to 'step out' of my dis-comfort I ended my improvisation with a sudden flick of my hands, enacting throwing something away.

Reflecting on my embodiment with my witness I was struck by the mismatch between my enactment of the 'journey' and the 'arrival'. There was a clear imbalance between the attention and intention represented in my embodiment at the two different points of my

improvisation. Unpacking this material further, I realised that hierarchies of ‘validity and evidence’ embedded in academic and clinical research, informed my ‘flippant’ conclusion to my embodied processing. And yet the antidote, in the words of my witness, was not to step out of the situation, but rather to step in the middle of it. Through my relational movement improvisation I became witness to my own embodied process as a researcher, whilst (and because I was) being witnessed by an other. Meaning making was co-created in the (kinaesthetic) space between myself and my witness.

My embodied vignette above captures the experiential tensions I engaged with throughout my research. These corporeal tensions further relate to the bigger picture for research, practice and society in terms of understanding kinaesthetic empathy. Engaging in research, either as investigators or participants offers an opportunity to interrogate existing knowledge and to question what else can be known. In this sense, research can become action and action can become intervention. As expounded in this thesis, kinaesthetic empathy is not an abstract notion but an embodied intersubjective phenomenon. Kinaesthetic empathy bridges lived experience, affect and cognition in relationship. In proposing kinaesthetic understandings as valuable contributions towards broader research (in DMP, cognitive neuroscience and phenomenology), clinical practice (healthcare and psychotherapies) and socio-political contexts (arts, community, wellbeing) I am engaging with the tensions I encountered throughout my investigation: of what is currently happening (status quo) and what more can potentially be done (intervention). The moving expressive body is at the centre of our intersubjective experiences. By attending to our moving bodies in relationship as parents, teachers, clinicians, citizens, politicians, artists, scientists, family members, friends may transform our empathic and communicative resources. Most importantly, kinaesthetic empathy facilitates connection with our integrated selves and thus, with others in relationship.

To make ourselves visible to others, we must bear to see ourselves first. To be able to recognise another we must know where our embodied ‘I’s (and eyes) end. Our moving bodies are not extensions of our intelligent mind, they are our integrated ecological selves existing in constant (relational) flux. Perhaps the next step, in this investigation of kinaesthetic empathy, is about ‘transdisciplinarity’ or what Davoudi & Pendlbury (2010) describe as the science of hybridisation towards a social learning process. Or maybe the next stage is about ‘stepping in the middle’ and welcoming another to join the dance. So that our multiple ‘Me’s’ and ‘You’s’ may finally become Us.

Bibliography

- Aden, P. (2014). Theatre Education for an Empathic Society. In *International Conference on Performing Arts in Language Learning*. Research Gate. Retrieved 10/08/2015, pp. 1-4.
- Aglioti, S. M., Cesari, P., Romani, M. & Urgesi, C. (2008). Action Participation and Motor Resonance in Elite Basketball Players. *Nature Neuroscience*, 11 (9), pp. 1109 – 1116.
- Agnew, Z.K., Bhakoo, K.K. & Puri, B.K. (2007). The Human Mirror Neuron System: A Motor Resonance Theory of Mind-reading. *Brain Research Reviews*, 54, pp. 286-293.
- Allegranti, B. & Silas, S. (2016). The Art and Science of Kinaesthetic Intersubjectivity: Social Justice in Motion. *Embodying Social Justice Conference*. London: University of Roehampton.
- Allegranti, B. (2015) 2nd Edition. *Embodied Performances. Sexuality, Gender, Bodies*. London/New York: Palgrave MacMillan.
- Allegranti, B. & Silas, J. (2014). What Moves Us: A Neuro-psycho-social Performance Exploring the Art and Science of Kinaesthetic Intersubjectivity in Capoeira. *Embodied Research Methodologies Symposium*. London: University of Roehampton.
- Allegranti, B. (2014). Corporeal Kinship: Dancing the entanglements of love and loss. In J. Wyatt & T. E. Adams (eds.). *On (Writing) Families. Autoethnographies of Presence and Absence, Love and Loss*. Rotterdam/Boston/Taipei: Sense Publishers.
- Allegranti, B. (2013). The Politics of Becoming Bodies: Sex, Gender and Intersubjectivity in Motion. *The Arts in Psychotherapy, Special Issue on Gender and the Arts Therapies*, 40, pp. 394 – 403.
- Allegranti, B. (2009). Embodied Performances of Sexuality and Gender: A Feminist Approach to Dance Movement Therapy and Performance Practice. *Body, Movement and Dance in Psychotherapy*, 4 (1), pp. 17-31.
- Allen-Collinson, J. (2011). Feminist Phenomenology and the Woman in the Running Body. *Sport, Ethics and Philosophy*, 5 (3), pp. 297-313.

Annoshian, L. J. (2008) & Hertel, P. T. (2008). Emotionality in Free Recall: Language Specificity in Bilingual Memory. *Cognition and Emotion*, 8 (6), pp. 503 – 514.

Avila, A. (2014). The Intersubjective: A core Concept for Psychoanalysis. *International Forum of Psychoanalysis*. DOI: 10.1080/0803706X.2014.967813.

Baird, A. D., Sheffer, I. E. & Wilson, S.J. (2011). Mirror Neuron System Involvement in Empathy: A Critical Look at the Evidence. *Social Neuroscience*, 6 (4), pp. 327 – 335.

Barad, K. (2003). Posthumanist Performativity: Toward an Understanding of how Matter comes to Matter. *Signs: Journal of Women in Culture and Society*, 28 (3), pp. 801-831.

Barbour, K. N. (2011). *Dancing Across the Page. Narrative and Embodied Ways of Knowing*. Bristol, UK/Chicago, USA: Intellect.

Barnard, P. & McGregor, W. (2013). *Process and Concept Tracking (PACT). A Method of Mind Mapping*. Wellcome Collection. Retrieved from <http://wellcomecollection.org/exhibitions/thinking-body-mind-and-movement-work-wayne-mcgregor-random-dance>.

Baron-Cohen, S. & Wheelwright, S. (2004). The Empathy Quotient: An Investigation Of Adults With Asperger Syndrome Or High Functioning Autism, And Normal Sex Differences, *Journal of Autism Developmental Disorder*, 34 (2), pp. 163-75.

Barua, A. & Minakshi, D. (2014). Phenomenology, Psychotherapy and the Quest for Intersubjectivity. *Indo-Pacific journal of phenomenology*, 14 (2), October, pp. 1-11.

Batson, C.D. (2011). These Things Called Empathy: Eight Related but Distinct Phenomena. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy*. Cambridge, Massachusetts: The MIT Press.

Beausoleil, E. & Lebaron, M. (2013). What moves us: Dance and Neuroscience. Implications for Conflict Approaches. *Conflict Resolution Quarterly*, 3 (2), Winter pp. 133-158.

Becoming Bodies (2013). Directed by Beatrice Allegranti. www.beatriceallegranti.com.

Behrends, A., Muller, S., & Dziobek, I. (2012). Moving in and out of Synchrony: A Concept for a New Intervention Fostering Empathy Through Interactional Movement and Dance. *The Arts in Psychotherapy*, Elsevier Inc, 39, pp. 107-116.

Belkofer, C. M. & Konopka, L. M. (2008). Conducting Art Therapy Research Using Quantitative EEG Measures. *Journal of the American Art Therapy Association (AATA)*, 25 (2), pp. 56-63.

Bernier, R., Dawson, G., Webb, S. & Murias, M. (2007). EEG Mu Rhythm and Imitation Impairments in Individuals with Autism Spectrum Disorder. *Brain Cognitive Research*, August, 64 (3), pp. 228-237.

Best, P. A. (2005). Embodied Choices and Voices. *Emotion Quarterly ADMP UK*, XIV, 13, pp. 12-15.

Berrol, C. F. (2006). Neuroscience Meets Dance/movement Therapy: Mirror Neurons, The Therapeutic Process and Empathy. *The Arts in Psychotherapy*, 33, pp. 302 – 315.

Blakemore, C., Wilson, D., Dunbar, R., Clayton, N. & Gallese, V. (2013). What's so Special About the Human Mind? *Panel Discussion at the Launch of the Human Mind Project*. School of Advanced Study: University of London UK.

Blassing, B., Calvo-Merino, B., Cross, E.S., Jola, C., Honisch, J. & Stevens, C.J. (2012). Neurocognitive Control in Dance Perception and Performance. *Acta Psychologica*, 139. Pp. 300-308.

Bluhm, R., Jacobson, A.J, Maibom, H. & Jaap Jacobson, A. (Eds) (2012). *Neurofeminism. Issues at the Intersection of Feminist Theory and Cognitive Science*. New York: Palgrave Macmillan

Boas, S. (2006). The Body of Culture. Transcultural Competence in Dance Movement Therapy. In Payne, P. (ed). *Dance Movement Therapy. Theory, Research and Practice* (pp. 112 – 131). London/New York: Routledge.

Bowlby, J (2005). *A Secure Base. Clinical Implications of Attachment Theory*. London/New York: Routledge.

Braadbaart, L., Williams, H.G., & Waiter, G.D. (2013). Do Mirror Neuron Areas Mediate Mu Rhythm Suppression During Imitation and Action Observation? *International Journal of Psychophysiology*, 89, pp. 99-105.

Brauninger, I. (2012). Dance Movement Therapy Group Intervention in Stress Treatment: a Randomised Control Trial (RCT). *The Arts in Psychotherapy*, 39, pp. 443-450.

- Brown, L.F., Davis, L.W., LaRocco, V.A. & Strasburger, A. (2010). Participant Perspectives of Mindfulness Training for Anxiety in Schizophrenia. *American Journal of Psychiatric Rehabilitation*, 13, pp. 224-242.
- Buk, A. (2009). The Mirror Neuron System and Embodied Simulation: Clinical Implications for Art Therapists Working with Trauma Survivors. *The Arts in Psychotherapy*, 33, pp. 61-74.
- Butler, J. (2007). *Gender Trouble*. New York/London: Routledge.
- Butler, J. (2004). *Undoing Gender*. New York/London: Routledge.
- Calvo-Merino, B., Urgesi, G., Orgs, S., Aglioti, S.M. & Haggart, P. (2010). Extrastriate Body Area Underlies Aesthetic Evaluation of Body Stimuli. *Experimental Brain Research*, 204, pp. 447-456.
- Calvo-Merino, B., Jola, C., Glaser, D.E., & Haggart, P. (2008). Towards a Sensorimotor Aesthetics of Performing Art. *Consciousness and Cognition*, 17, pp. 911-922.
- Calvo-Merino, B., Gre`zes, J., Glaser, D.E., Passingham, R.E., & Haggard, P. (2006). Seeing or Doing? Influence of Visual and Motor Familiarity in Action Observation. *Current Biology*, 16, pp. 1905–1910, Elsevier Ltd. DOI 10.1016/j.cub.2006.07.065.
- Calvo-Merino, B. Glaser, D.E., Grezes, J., Passingham, R.E. and Haggart, P. (2005). Action Observation and Acquired Motor Skills: an fMRI Study with Expert Dancers. *Cereb Cortex*, 15, pp. 1243-1249.
- Care Quality Commission (2014). Retrieved from www.cqc.org.uk.
- Carr, J. (2014). LandMark: Dance as a Site of Intertwining. *Journal of Dance & Somatic Practice*, 6 (1), pp. 47 – 59.
- Casile, A., Caggiano, V. & Ferrari, P. F. (2011). The Mirror Neuron System: A Fresh View. *The Neuroscientist*, 17 (5), pp. 524-538.
- Chaiklin, S. & Wengrower, H. (2009). *The Art and Science of Dance/Movement Therapy, Life is Dance*. New York/London: Routledge Taylor Francis Group.

Chang, M. (2009). Cultural Consciousness and the Global Context of Dance/Movement Therapy. In S. Chaiklin & H. Wengrower (eds.) *The Art and Science of Dance/Movement Therapy, Life is Dance* (pp. 299 – 316). New York/London: Routledge.

Chettiparamb, A. (2007). Interdisciplinarity: A Literature Review. *The Interdisciplinary Teaching and Learning Group, Subject Centre for Languages, Linguistics and Area Studies*. School of Humanities, University of Southampton.

Christians, B. (2014). *An Investigation Into the Potential Benefits of Dance Movement Psychotherapy when Working with the Psychosomatic Symptoms of Burnout*. Unpublished MA Dissertation. London: University of Roehampton.

Churchill, S. D. (2012). Teaching Phenomenology by Way of “Second-person” Perspectivity. *Indo-Pacific Journal of Phenomenology*, 12, Special Edition, September, pp. 1-14.

Claxton, G. (2015). *Intelligence in the Flesh. Why your Mind Needs your Body Much More than it Thinks*. New Haven/London: Yale University Press.

Cleary, M. (2003). The Challenges of Mental Health Care Reform for Contemporary Mental Health Nursing Practice: Relationships, Power, Control. *International Journal of Mental Health Nursing*, 12, pp. 139-147.

Coaten, R. (2009). *Building Bridges of Understanding: The Use of Embodied Practices with Older People with Dementia and their Care Staff as mediated by Dance Movement Therapy*. Unpublished PhD Thesis: School of Human and Life Sciences, Roehampton University.

Coll, C.G., Bearer, E. L & Lerner, R.M. eds. (2004). *Nature and Nurture. The Complex Interplay of Genetic and Environmental Influences on Human Behaviour and Development*. New York/London: Psychology Press, Taylor & Francis Group.

Collins, H. (2010). *Tacit and Explicit Knowledge*. Chicago & London: The University of Chicago Press.

Confer (2016). *Embodied Approaches to Psychotherapy*. Retrieved from <http://www.confer.uk.com/module-embodied.html>.

Cross, E. S., Kraemer, D.J.M., Hamilton, A.F, Kelley, W.M. & Grafton, S. T. (2009). Sensitivity of the Action Observation Network to Physical and Observational Learning. *Cerebral Cortex*, 19, pp. 315 – 326.

- Cruz –Garza, J. G., Hernandez, Z. R., Nepaul, S. Bradley, K.K. & Contreras-Vidal, J. L. (2014). Neural Decoding of Expressive Human Movement from Scalp Electroencephalography (EEG). *Frontiers in Human Neuroscience*, 8 (188), pp. 1 – 16.
- Csordas, T.J. (2008). Intersubjectivity and Intercorporeality. *Subjectivity*, 22, pp. 110-121.
- Damasio, A.R. (1994). *Descartes' Error: Emotion, Reason and the Human Brain*. New York: Avon Books.
- Davoudi, S. & Pendlbury, J. (2010). Evolution of planning as an academic discipline. *Town Planning Review*, 81 (6), pp. 613-644.
- Decety, J. & Ickes, W. (Eds.). (2011) *The Social Neuroscience of Empathy*. Cambridge, Massachusetts: The MIT Press.
- Decety, J., & Michalska, K. J. (2010). Neurodevelopmental Changes in the Circuits Underlying Empathy and Sympathy from Childhood to Adulthood. *Developmental Science*, 13, pp. 886–899.
- Decety, J. & Jackson, P.L. (2006). A Social-Neuroscience Perspective on Empathy. *Association for Psychological Science*, 15 (2), pp. 54-58.
- Decety, J. & Lamm, C. (2006). Human Empathy through the Lens of Social Neuroscience. *The Scientific World Journal*, 6, pp. 1146 – 1163.
- Dekeyser, M., Elliot, R. & Leijssen, M. (2011). Empathy in Psychotherapy: Dialogues and Embodied Understanding. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy* (pp. 113 – 124). Cambridge, Massachusetts: The MIT Press.
- Diagnostic Statistical Manual V* (2014). Retrieved from <http://dsm.psychiatryonline.org>.
- Dickter, C.L. & Kieffaber, P.D (2014). *EEG Methods for the Psychological Sciences*. Los Angeles/London: Sage.
- Dillon, M.C. (1997). *Melreau-Ponty's Ontology*. Evanston/Illinois: Northwestern University Press.
- Dinos, S., Stevens, S., Serfaty, M., Weich, S. & King, M. (2004). Stigma: The Feelings and Experiences of 46 People with Mental Illness. *British Journal of Psychiatry*, 184, pp.176 – 181.

Di Pellegrino, G., Fadiga, L., Fogassi, L., Gallese, V. & Rizzolatti, G. (1992). Understanding Motor Events: a Neurophysiological Study. *Experimental Brain Research*, 91, pp. 176–80.

Diprose, R. & Reynolds, J. (eds.). (2008). *Merleau-Ponty Key Concepts*. Stocksfield: Acumen.

Dixon-Woods, M., Baker, R., Charles, K., Dawson, J., Jerzembek, G., Martin, G., McCarthy, I., McKee, L., Minion, J., Ozieranski, P., Willars, J., Wilkie, P. & West, M. (2013). Culture and Behaviour in the English National Health Service: Overview of Lessons from a Large Multimethod Study. *BMJ Quality and Safety*. DOI:10.1136/bmjqs-2013-001947.

Dotov, D.G., Nie, L. & de Wit, M.M. (2012). Understanding Affordances: History and Contemporary Development of Gibson's Central Concept. *AVANT*, III, (2), pp. 28 – 39.

Dromey, J. (2014). *Meeting The Challenge. Successful Employee Engagement in the NHS*. www.ipa-involve.com.

East London NHS Foundation Trust. Mother and Baby Unit (2015). Retrieved from <http://preview.eastlondon.nhs.uk/Training/Services/Adult-Mental-Health/City-and-Hackney/Margaret-Oates-Mother-and-Baby-Unit.aspx>.

Edwards, J. (2015). Exploring Sensory Sensitivities and Relationships during Group Dance Movement Psychotherapy for Adults with Autism. *Body, Movement and Dance in Psychotherapy: An International Journal for Theory, Research and Practice*, 10 (1), pp. 5-20.

Eisenberg, N. & Eggum, N. D. (2011). Empathic Responding: Sympathy and Personal Distress. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy* (pp. 71-83). Cambridge, Massachusetts: The MIT Press.

Ellis, E., Carroll, R., Allegranti, B., Wyatt, J., Cooper, M., Weaver, D. & Kamalamani (2016). Panel Discussion. *Embodying Social Justice Symposium*. London: Roehampton University.

Fachner, J., Gold, C. & Erchila, J. (2013). Music Therapy Modulates Fronto-temporal Activity in rest-EEG in Depressed Clients. *Brain Topography*, April 26 (2), pp. 338-54. doi: 10.1007/s10548-012-0254-x.

Fachner, J. & Stegenmann, T. (2013). Electroencephalography and Music Therapy: On the Same Wavelength? *Music and Medicine Online First*. Doi:10.1177/1943862113495062.

- Finlay, L. (2012). Writing the Pain: Engaging First-person Phenomenological Accounts. *Indo-Pacific Journal of Phenomenology*, 12, special edition, July, pp. 1-9.
- Finlay, L. (2009). Debating Phenomenological Research Methods. *Phenomenology & Practice*, 3, pp. 6-25.
- Finlay, L. (2006). Dancing Between Embodied Empathy and Phenomenological Reflection. *The Indo-Pacific Journal of Phenomenology*, 6, special edition, August, pp. 1-11.
- Fischman, D. (2009). Therapeutic Relationships and Kinaesthetic Empathy. In S. Chaiklin & H. Wengrower (eds.). *The Art and Science of Dance/Movement Therapy, Life is Dance*. New York/London: Routledge.
- Fodor, J. (1990). *A Theory of Content and Other Essays*. Cambridge/Massachusetts: MIT Press.
- Fodor, J. (1983). *Modularity of Mind: An Essay on Faculty Psychology*. Cambridge/Massachusetts: MIT Press.
- Fogassi, L. (2011). The Mirror Neuron System: How Cognitive Functions Emerge from Motor Organisation. *Journal of Economic Behaviour & Organisation*, 77, pp. 66-75.
- Folensbee, R. (2007). *The Neuroscience of Psychological Therapies*. Cambridge: Cambridge University Press.
- Fox, N. A., Bakermans-Kranenburg, M. J., Yoo, K.H., Bowman, L.C, Cannon, E.N., Vanderwert, R.E., Ferrari, P. F & van Ijzendoorn, M.H (2016). Assessing Human Mirror Neuron Activity with EEG Mu Rhythm: A Meta-Analysis. *Psychological Bulletin*, 142 (3) pp. 291-313.
- Gallagher, S. & Payne, H. (2014). The Role of Embodiment and Intersubjectivity in Clinical Reasoning. *Body Movement and Dance in Psychotherapy, An International Journal for Theory, Research and Practice*, DOI:10.1080/17432979.2014.980320.
- Gallagher, S. (2008). Direct Perception in the Intersubjective Context. *Consciousness and Cognition*, 17, pp. 535-543.

Gallagher, S. (2007). Phenomenological and Experimental Contributions to Understanding Embodied Experience. In T. Ziemke, J. Zlatev, & R.M. Frank, (eds.). *Body, Language and Mind*. Berlin: Mouton De Gruyter.

Gallagher, S. (2005). *How the Body Shapes the Mind*. Oxford: Clarendon Press.

Gallese, V. (2014). The Minimal Bodily Self: Behavioural and Neuroscientific Evidence. Paper presented at *Mirror Neurons, Embodied Empathy and The Boundaries of the Self – The Art and Science of Deep Therapeutic Connection*. London: Confer Conference.

Gallese, V. (2014). Empathic Bodily Selves in Relation: from Mirror Neurons to Embodied Simulation. Paper presented at *Mirror Neurons, Embodied Empathy and The Boundaries of the Self – The Art and Science of Deep Therapeutic Connection*. London: Confer Conference.

Gallese, V. (2009). Mirror Neurons, Embodied Simulation and the Neural Basis of Social Identification. *Psychoanalytic Dialogues*, 19, pp. 519-536.

Gallese, V., Keysers, C. & Rizzolatti, G. (2004). A Unifying View of the Basis of Social Cognition. *Trends in Cognitive Sciences*, 8 (9), pp. 396 – 403.

Gallese, V. (2003). The Roots of Empathy: The Shared Manifold Hypothesis and the Neural Basis of Intersubjectivity. *Psychopathology*, 36 (4), pp. 171-180.

Galvin, K. & Todres, L. (2012). Phenomenology as Embodied Knowing and Sharing: Kindling Audience Participation. *Indo-Pacific Journal of Phenomenology*, 12, Special Edition, July, pp. 1-9.

Gazolla, V, Aziz-Zadeh, L. & Keysers, C. (2006). Empathy and the Somatotopic Auditory Mirror System in Humans. *Current Biology*, 16 (18), pp. 1824 – 1829.

Gendlin, E. T. (2003). *Focusing*. London/Sydney: Rider.

Gerhardt, S. (2004). *Why Love Matters. How Affection Shapes a Baby's Brain*. London/New York: Routledge.

Gibson, J. J. (1979). *The Ecological Approach to Visual Perception*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Gilburt, H. Rose, D. & Slade, M. (2008). The Importance of Relationships in Mental Health Care: A Qualitative Study of Service users' Experiences of Psychiatric Hospital Admission in the UK. *BMC Health Services Research*, 8, p. 92.

Gray, V. (2012) Re-thinking Stillness: Empathetic Experiences of Stillness in Performance and Sculpture. In D. Reynolds and M. Reason (eds.). *Kinesthetic Empathy in Creative and Cultural Practices* (pp. 199-217). Bristol, UK/Chicago, USA: Intellect.

Greeno, J. G. (1994). Gibson's Affordances. *Psychological Review*, 101, (2), pp. 336-342.

Grosz, E. (1994). *Volatile Bodies. Toward a Corporeal Feminism*. Bloomington & Indianapolis: Indiana University Press.

Guest, A. H. (2005) *Labanotation: The System of Analysing and Recognising Movement*. New York/London: Routledge.

Hackney, P. (2002). *Making Connections: Total Body Integration through Bartennieff Fundamentals*. New York: Routledge.

Harre, R. (1999). Discourse and the Embodied Person. In D.J. Nightingale & J. Cromby (eds.). *Social Constructionist Psychology, A Critical Analysis of Theory and Practice* (pp. 97 – 112), Buckingham/Philadelphia: Open University Press.

Harris, D. A. (2007). Pathways to Embodied Empathy and Reconciliation after Atrocity: Former Boy Soldiers in a Dance/movement Therapy Group in Sierra Leone. *Intervention*, 5 (3), pp. 203 – 231.

Hatfield, E., Rapson, R. L. & Le, Y.L. (2011). Emotional Contagion and Empathy. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy*. Cambridge, Massachusetts: The MIT Press.

Hays, A. E. & Tipper, S.P. (2012). Affective Responses to Everyday Actions. In D. Reynolds and M. Reason (eds.). *Kinesthetic Empathy in Creative and Cultural Practices* (pp. 66-84). Bristol, UK/Chicago, USA: Intellect.

Herbert, B. M, & Pollatos, Olga (2012). The Body in the Mind: on the Relationship Between Interoception and Embodiment. *Topics in Cognitive Science*, 4, pp. 692 – 704.

Hobson, H. H. & Bishop, V. M. (2016). Mu Suppression – A Good Measure of the Human Mirror Neuron System? *Cortex*. DOI: 10.1016/j.cortex.2016.03.019.

Horan, W. P., Pineda, J.A., Wynn, J.K., Iacoboni, M. & Green, M.F. (2014). Some Markers of Mirroring Appear Intact in Schizophrenia: Evidence from Mu Suppression. *Cognitive Affective Behavioural Neuroscience*, 14, pp. 1049-1060.

Houston, S. & McGill A. (2013). A Mixed Methods Study into Ballet for People Living with Parkinson's. *Arts and Health*, 5 (2), pp. 103 – 119. DOI: 10.1080/17533015.2012.745580.

Howitt, D. (2013). *Introduction to Qualitative Methods in Psychology*, Harlow: Pearson.

Hustvedt, S. (2013). Pina: Dancing for Dance. *The Criterion Collection*. Retrieved from <https://www.criterion.com/current/posts/2634-pina-dancing-for-dance>.

I Can't Find Myself (2015). Directed by Beatrice Allegranti. www.beatriceallegranti.com.

Iacoboni, M. (2009). Imitation, Empathy and Mirror neurons. *Annual Review of Psychology*. 60, pp. 653-670.

Iacoboni, M., & Dapretto, M. (2006). The Mirror Neuron System and the Consequences of its Dysfunction. *Nature Reviews. Neuroscience*, 7(12) pp. 942-951.

Iacoboni M, Molnar-Szakacs I, Gallese V, Buccino G, Mazziotta JC, et al. (2005) Grasping the Intentions of Others with One's Own Mirror Neuron System. *PLoS Biology* 3 (3): e79, pp. 0529-0535.

Ickes, W. (2011). Empathic Accuracy: Its links to Clinical, Cognitive, Developmental, Social, and Physiological Psychology. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy*. pp. 57- 70. Cambridge, Massachusetts: The MIT Press.

Jarvelainen, J., Schurmann, M., Avikainen, S. & Hari, R. (2001). Stronger Reactivity of the Human Motor Cortex during Observation of Live rather than Video Motor Acts. *Neuroreport*, 12 (16), pp. 3493-5.

Jastoff, J., Kourtzi, Z. & Giese, M. A. (2009). Visual Learning Shapes the Processing of Complex Visual Stimuli in the Human Brain. *The Journal of Neuroscience*, 29 (44), pp. 14026 – 14038. DOI: 10.1523/JNEUROSCI.3070-09.2009.

Johns, C. (ed.). (2010). *Guided Reflection, a Narrative Approach to Advancing Professional Practice*. UK/USA: Wiley-Blackwell.

Jola, C. (2012). Moved by Dance – With and Without Experience. *Psychology Department Seminar Series*. London: Roehampton University.

Jola C., Abedian-Amiri, A., Kuppuswamy, A., Pollick, F. E. & Grosbras, M. (2012). Motor Simulation Without Motor Expertise: Enhanced Corticospinal Excitability in Visually Experienced Dance Spectators. *PLoS ONE*, March, 7 (3), pp. 1-12.

Jola, C., Ehrenberg, S. & Reynolds, D. (2011). The Experience of Watching Dance: Phenomenological-Neuroscience Duets. *Phenomenology and the Cognitive Sciences*, 11, pp. 17-37.

Jones, P. (2005). *The Arts Therapies. A Revolution in Healthcare*. Hove/New York: Brunner-Routledge.

Kafle, N.P. (2011). Hermeneutic Phenomenological Research Simplified. *Bodhi: An Interdisciplinary Journal*. 5, pp. 181-200.

Kaplan, J. T. & Iacoboni, M. (2007). Getting a Grip of other Minds: Mirror Neurons, Intention Understanding, and Cognitive Empathy. *Social Neuroscience*, 1 (3-4), pp. 175 – 183.

Kaplan, G. & Rogers, L.J. (2003). *Gene Worship. Moving Beyond the Nature/Nurture Debate over Genes, Brain, and Gender*. New York: Other Press.

Kaylo, J. (2006). The Body in Phenomenology and Movement Observations. *Emotion Quarterly ADMT UK*, XIV (17), pp. 5- 11.

Keng, S., Smoski, M.J., & Robins, C. (2011). Effects of Mindfulness on Psychological Health: a Review of Empirical Studies. *Clinical Psychology Review*, 31, pp. 1041 – 1056.

Kestenberg-Amighi J., Loman, S., Lewis, P., & Sossin, K. M. (1999). *The Meaning of Movement: Developmental and Clinical Perspectives of the Kestenberg Movement Profile*. New York, NY: Brunner-Routledge.

Keysers, C. & Gazzola, V. (2009). Expanding the Mirror: Vicarious Activity for Actions, Emotions, and Sensations. *Current Opinion in Neurobiology*, 19 pp. 666-671.

- Kinsella, E.A. (2007). Embodied Reflection and the Epistemology of Reflective Practice. *Journal of Philosophy of Education*, 41 (3), pp. 395-409.
- Koch, S. (2014). Rhythm is It: Effects of Dynamic Body Feedback on Affect and Attitudes. *Frontiers in Psychology*, 5, pp. 1-11. DOI: 10.3389/fpsyg.2014.00537.
- Koch, S., Kunz, T., Lykou, S. & Cruz, R. (2014). Effects of Dance Movement Therapy and Dance on Health-related Psychological Outcomes: A Meta-analysis. *The Arts in Psychotherapy*, 41 (1), pp. 46-64.
- Koch, C. S. & Bräuninger, I. (eds.) (2006). *Advances in Dance/Movement Therapy: Theoretical Perspectives and Empirical Findings*. Berlin: Logos Verlag.
- Knight, Z. G. & Bradfield, B.C. (2003). The Experience of Being Diagnosed with a Psychiatric Disorder: Living the Label. *The Indo-Pacific Journal of Phenomenology*, 3, Edition1, November, pp. 1-20.
- Knox, J. (2014). Embodied Empathy and Mirror Neurons – Their impact on the Therapist's Role. Paper presented at *Mirror Neurons, Embodied Empathy and the Boundaries of the Self – The Art and Science of Deep Therapeutic Connection*. London: Confer Conference.
- Knox, J. (2013). Before, Beyond and Beneath Meaning: Developmental, Neuroscientific and Pragmatic Perspectives on Non-verbal Aspects of Intersubjectivity. Paper presented at *The Power of Non-Verbal Communication in the Talking Cure*. London: Confer Conference.
- Laugharne, R & Priebe, S. (2006). Trust, Choice and Power in Mental Health. *Social Psychiatry Epidemiology*. 41, pp. 843-852.
- Leigh, J. S. & Bailey, R. (2013). Reflection, Reflective Practice and Embodied Reflective Practice. *Body, Movement and Dance in Psychotherapy: An International Journal for Theory, Research and Practice*, 8 (3). pp. 160-171.
- Leiter, M.P. & Maslach, C. (2009). Nurse Turnover: The mediating Role of Burnout. *Journal of Nursing Management*, 17, pp. 331-339.
- Lippa, R. A. (2005) 2nd ed. *Gender, Nature and Nurture*. New York/London: Psychology Press, Taylor Francis Group.

Liew, S.L., Han, S. & Aziz-Zadeh, L. (2010). Familiarity Modulates Mirror Neuron and Mentalizing Regions during Intention Understanding. *Human Brain Mapping*, 32 (11), pp. 1986 – 1997.

Loman, S. & Sossin, K. M. (2009). Applying the Kestenberg Movement Profile in Dance/Movement Therapy. In S. Chaiklin & H. Wengrower (eds.) *The Art and Science of Dance/Movement Therapy, Life is Dance* (pp. 237 – 264). New York/London: Routledge.

Macann, C. (1993). *Four Phenomenological Philosophers*. London/New York: Routledge.

Mala, A., Karkou, V. & Meekums, B. (2012). Dance/movement Therapy (D/MT) for Depression: A Scoping Review. *The Arts in Psychotherapy*, 39 (4), pp.287–295.

Manen, M. V. (1990). *Researching Lived Experience*, London/Ontario: State University of New York Press.

Matar, A.A.G & Gribble, P.L. (2005). Motor Learning by Observing. *Neuron*, 46, pp.153 - 160.

McGarry, L. M. & Russo, F.A. (2011). Mirroring in Dance/Movement Therapy: Potential Mechanisms behind Empathy Enhancement. *The Arts in Psychotherapy*, Elsevier Inc, 38, pp. 178-184.

McGregor, W., Barnard, P. & Thiemann, E. (2015). *Neuroscience and Dance*. University of Oxford: Humanities and Science – Dance Scholarship Oxford.

McGregor, W., & de Lahunta, S. (2013). Thinking with the body. *Wellcome Collection* (Retrieved from: <http://wellcomecollection.org/exhibitions/thinking-body-mind-and-movement-work-wayne-mcgregor-random-dance>).

McLean, C. & Kelly, R. (Eds.). (2010). *Creative Arts in Interdisciplinary Practice: Inquiries for Hope and Change*, Canada: Detselig Enterprises Ltd.

Merleau-Ponty, M. (1968). *The Visible and the Invisible*. Evanston, Illinois: Northwestern University Press.

Meekums, B., Karkou, V., & Nelson, E.A. (2014). *Dance Movement Therapy for Depression*. Cochrane Database of Systematic Reviews.

Meekums, B. (2013). Learning from the Body in Relationship. Paper presented at *The Power of Non-Verbal Communication in the Talking Cure*. London: Confer Conference.

Meekums, B. (2012) Kinesthetic Empathy and Movement Metaphor in Dance Movement Psychotherapy. In D. Reynolds and M. Reason (eds.). *Kinesthetic Empathy in Creative and Cultural Practices* (pp. 51 – 65). Bristol, UK/Chicago, USA: Intellect.

Meekums, B. (2010). Moving Towards Evidence for Dance Movement Psychotherapy: Robin Hood in Dialogue with the King. *Arts in Psychotherapy Journal*, 37, pp. 35-41.

Meekums, B. (2005). *Dance Movement Therapy*. London/Thousand Oaks/New Delhi: Sage Publications.

Mehrabian, A. & Epstein, N. (1972). A Measure of Emotional Empathy. *Journal of Personality*, 40(4), pp. 525-543.

Merriam, S. B. & Associates (2002). *Qualitative Research in Practice*. San Francisco: Jossey-Bass.

Mertens, D. M, & Hesse-Biber, S. (2012). Triangulation and Mixed Methods Research: Provocative Positions. *Journal of Mixed Methods Research*, 6 (2), pp. 75-79.

Mind UK. (2014). *Your Stories*. Retrieved from <http://www.mind.org.uk/?gclid=CMHimsGH7MECFUjItAodClsARw>.

Molnar-Szakacs, I. & Overy, K. (2006). Music and Mirror Neurons: from Motion to ‘e’motion. *SCAN I*, pp. 235-241.

Montag, C., Gallinat, J & Heinz, A. (2013). *Theodor Lipps and the Concept of Empathy*. pp. 1851-1914. Retrieved from <http://ajp.psychiatryonline.org/article.aspx?articleID=100211>.

Moore, A., Gorodnitsky, I. & Pineda, J. (2012). EEG Mu Component Responses to viewing Emotional Faces. *Behavioural Brain Research*, 226 (1), 309 – 316.

Morganti, F. (2008). What Intersubjectivity Affords: Paving the Way for a Dialogue between Cognitive science, Social cognition and Neuroscience. In Morganti, F., Carassa, A. & Riva, G. [eds.] *Enacting Intersubjectivity: A Cognitive and Social Perspective on the Study of Interactions*. Amsterdam: IOS Press, pp. 3-14.

- Murphy, A. (2008). Feminism and Race Theory. In R. Diprose & J. Reynolds (eds.). *Merleau-Ponty Key Concepts*. UK: Acumen.
- Muthukumaraswamy, S. D. & Johnson, B. (2007). A Dual Mechanism Neural Framework for Social Understanding. *Philosophical Psychology*, 20 (1), February, pp. 43–63.
- Muthukumaraswamy, S.D., Johnson, B. W. & McNair, N.A. (2004). Mu Rhythm Modulation during Observation of an Object-directed Grasp. *Cognitive Brain Research*, 19, pp. 195-201.
- Nightingale, D.J. & Cromby, J. (Eds.). (1999). *Social Constructionist Psychology - A critical Analysis of Theory and Practice*, Buckingham/Philadelphia: Open University Press.
- Nissani, M. (1997). Ten Cheers for Interdisciplinarity: The Case for Interdisciplinary Knowledge and Research. *The Social Science Journal*, 34 (2), pp. 201-216.
- Noe, A. (2006). *Action in Perception*. Cambridge, Massachusetts/London, England: The MIT Press.
- Nolan, P. (2014). The Relational field of Body Psychotherapy. *Body, Movement and Dance in Psychotherapy*, 9 (1), pp. 29-40.
- Nunes Tucker, A., & Price, A. (2010). Performance based Approaches and Moving Toward Kinaesthetic Understandings of Illness in Healthcare. In C. McLean and R. Kelly (eds.) *Creative Arts in Interdisciplinary Practice* (pp. 185- 202). Canada: Alberta Foundation for the Arts.
- Nunes Tucker, A, Price, A. & Diedrich, A. (2010). Reflections on Performance. In Johns, C. (ed.) *Guided Reflection: a Narrative Approach to Professional Practice*. 2nd ed. Oxford: Wiley-Blackwell.
- Oberman, L.M., Pineda, J.A. & Ramachandran, V.S. (2007). The Human Mirror Neuron System: A Link between Action Observation and Social Skills. *Social Cognitive and Affect Neuroscience*, March, 2 (1), pp. 62-66.
- Oberman, L.M., Hubbard, E.M, MsCleery, J.P., Altschuler, E.L., Ramachandran, V.S. & Pineda, J.A (2005). EEG Evidence for Mirror Neuron Dysfunction in Autism Spectrum Disorders. *Cognitive Brain Research*, 24, pp. 190-198.

Orbach, S. (2016). Bodies Bearing the Marks of Injustice. *Embodying Social Justice Conference, Centre for Arts Therapies Research*. London: University of Roehampton.

Orbach, S. (2009). *Bodies*. London: Profile Books.

Pallaro, P. (ed.) (2007). *Authentic Movement: Moving the Body, Moving the Self, Being Moved*. London/Philadelphia: Jessica Kingsley Publishers.

Panhofer, H. & Payne, H. (2011). Languageing the Embodied Experience. *Body, Movement and Dance in Psychotherapy*, 6, 3, pp. 215 – 232.

Parker, G. & Best, P. A. (2005). Reflecting Processes and Shifting Positions in Dance Movement Therapy. *Emotion Quarterly ADMP UK*, XIV (11), pp. 4-7.

Paterson, Mark (2012) Movement for Movement's Sake? On the Relationship Between Kinaesthesia and Aesthetics. *Essays in Philosophy*, 13 (2), pp. 471-497. Retrieved from <http://dx.doi.org/10.7710/1526-0569.1433>.

Payne, H. (ed.). (2006). *Dance Movement Therapy: Theory, Research and Practice*. London/New York: Routledge.

Perez-Edgar, K., Kujawa, A., Nelson, S. K., Cole, C. & Zapp, D. J. (2013). The Relation between Electroencephalogram Asymmetry and Attention biases to Threat at Baseline and Under Stress. *Brain and Cognition*, 82, pp. 337-343.

Petrosini, L., Graziano, A., Mandolesi, L., Neri, P., Molinari, M. & Leggio, M.G. (2003). Watch How to Do It! New Advances in Learning by Observation. *Brain Research Reviews*, 42 (3), pp. 252-264.

Pfeifer, J.H. & Depretto, M. (2011). "Mirror Mirror in my Mind: Empathy, Interpersonal Competence, and the Mirror Neuron System. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy*. Cambridge, Massachusetts: The MIT Press.

Porcelli, P., Giromini, L., Parolin, L., Pineda, J.A. & Viglione, D. J. (2013). Mirroring Activity in the Brain and Movement Determinant in the Rorschach Test. *Journal of Personality Assessment*, 95 (5), pp. 444-456.

Posamentier, M.T. & Abdi, H. (2003). Processing Faces and Facial Expressions. *Neuropsychology Review*, 13: 113. doi:10.1023/A:1025519712569

- Preminger, S. (2012). Transformative Art: Art as Means for long-term Neurocognitive Change. *Frontiers in Human Neuroscience*. DOI: 10.3389/fnhum.2012.00096.
- Rabinowitch, T-C., Cross, I. & Burnard, P. (2012). Musical Group Interaction, Intersubjectivity and Merged Subjectivity. In D. Reynolds and M. Reason (eds.). *Kinesthetic Empathy in Creative and Cultural Practices* (pp. 110 – 120). Bristol, UK/Chicago, USA: Intellect.
- Ramazanoglu, C. & Holland, J. (2004). *Feminist Methodology – Challenges and Choices*. London/Thousand Oaks/New Delhi: Sage Publications.
- Rameson, L.T. & Lieberman, M.D. (2009). Empathy: A social Cognitive Neuroscience Approach. *Social and Personality Psychology Compass*, 3 (1), pp. 94-110.
- Ren, J. & Xia, J. (2013) Dance Therapy for Schizophrenia. *Cochrane Database of Systematic Reviews*, Issue 10. Art.No.: CD006868. DOI: 10.1002/14651858.CD006868.pub3.
- Reason, M. (2012). Photography and the Representation of Kinaesthetic Empathy. In D. Reynolds and M. Reason (eds.). *Kinesthetic Empathy in Creative and Cultural Practices* (pp. 238 – 256). Bristol, UK/Chicago, USA: Intellect.
- Reason, M. & Reynolds, D. (2010). Kinesthesia, Empathy, and Related Pleasures: An Inquiry into Audience Experiences of Watching Dance. *Dance Research Journal*, 42 (2) Winter, pp. 49 – 75.
- Reynolds, D. (2012). Kinesthetic Empathy and the Dance's Body: From Emotion to Affect. In D. Reynolds, & M. Reason (eds.) *Kinesthetic Empathy in Creative and Cultural Practices*. Bristol, UK/Chicago, USA: Intellect.
- Reynolds, D. & Reason, M. (Eds.). (2012). *Kinesthetic Empathy in Creative and Cultural Practices*. Bristol, UK/Chicago, USA: Intellect.
- Reynolds, D. et al. (2011). *Watching Dance: Kinesthetic Empathy*. Retrieved from: <http://www.watchingdance.org/index.php>.
- Rizzolatti, G. & Sinigaglia, C. (2008). *Mirrors in the Brain – How our Minds Share Actions and Emotions*. Oxford/New York: Oxford University Press.

- Rochat, P., Passos-Ferreira, C. & Salem, P. (2009). Three Levels of Intersubjectivity in Early Development. *In Enacting Intersubjectivity* pp. 173 – 190.
- Robinson, K. (2006). *Do Schools Kill Creativity?* California: TED Talks.
- Robson, C. (2002). *Real World Research*. USA/UK/Australia: Blackwell Publishing.
- Rogers, C.R. (2003). *Client-Centred Therapy*. London: Constable.
- Rohricht, F., Gallagher, S., Geuter, U., and Hutto, D. D. (2015). Embodied Cognition and Body Psychotherapy: The Construction of new Therapeutic Environments. *Sensoria: A Journal of Mind, Brain & Culture*. DOI: <http://dx.doi.org/10.7790/sa.v10i1.389>.
- Rohricht, F., Papadopoulos, N., Holden, S., Clarke, T. & Priebe, S. (2011). Therapeutic Processes and Clinical Outcomes of Body Psychotherapy in Chronic Schizophrenia – An Open Clinical Trial. *The Arts in Psychotherapy*, 38, pp. 196-203.
- Rova, M. (2014). Embodying Kinaesthetic Empathy, a Participatory Session. *Embodied Research Methodologies Symposium*. Roehampton: Centre for Arts Therapies Research.
- Rova, M. (2014). */mu/: A Dance Theatre Performance accompanied by a Photography and Art exhibition*. Roehampton: Centre for Arts Therapies Research [performed: 29/05/2014].
- Rova, M. (2009). *Toward a Phenomenology of Embodiment within Dance Movement Psychotherapy*. Unpublished MA Dissertation. London: University of Roehampton.
- Rowan, J. and Jacobs, M. (2002). *The Therapist's Use of Self*. Buckingham/Philadelphia: Open University Press.
- Sackett, DL., Rosenberg, MC., Gray, JA., Haynes, RB., Richardson, WS. (1996). Evidence Based Medicine: What it is and what it isn't. *British Medical Journal*, 312, pp. 71-72.
- Sadler's Wells (2006). *Mind, Brain and Performance Symposium*. UK: London.
- Samaritter, R. & Payne, H.(2013). Kinaesthetic Intersubjectivity: a Dance Informed Contribution to Self-other Relatedness and Shared Experience in Non-verbal Psychotherapy with an Example from Autism. *The Arts in Psychotherapy*, 40, pp. 143 -150.
- Sanberg, J. (2005). How do we Justify Knowledge Produced within Interpretative Approaches? *Organisational Research Methods*, 8 (1), January, pp. 41-68.

- Sandel, S.S. (1993). The Process of Empathic Reflection in Dance/movement therapy. In S. Sandel, S. Chaiklin and A. Lohn (eds.) *Foundations of Dance/movement therapy: The life and work of Marian Chase* (pp. 98 – 111). Columbia/Maryland: The Marian Chace Memorial fund of the American Dance Therapy Association.
- Sanders, M. (2008). Intersubjectivity and Alterity. In R. Diprose & J. Reynolds (eds.). *Merleau-Ponty Key Concepts* (pp 142 – 151). Stockfield: Acumen.
- Saxe, R. Moran, J.M., Scholz, J. & Gabrieli, J. (2006). Overlapping and Non-overlapping Brain Regions for Theory of Mind and Self-reflection in Individual Subjects. *SCAN*, 1, pp. 229 – 243.
- Saxe, R. (2005). Against Simulation: the Argument from Error. *Trends in Cognitive Science*, 9, pp. 174-179.
- Schauble, M. (2013). *Moving Towards a Definition of Corporeal Vicarious Trauma*. Unpublished MA Dissertation. London: University of Roehampton.
- Scott deLahunta (2004). Choreography and Cognition: A joint Research Project. Art and Science: Proceedings of the XVIII Congress of the International Association of Empirical Aesthetics. João Pedro Fróis, Pedro Andrade & J. Frederico Marques (eds.). *IAEA*. September, pp. 169-173.
- Shafi, N. (2014). Poetry Therapy and Schizophrenia: Clinical and Neurological Perspectives. *Journal of Poetry Therapy: The Interdisciplinary Journal of Practice, Theory, Research and Education*, 23 (2), pp. 87-99.
- Shamay-Tsoory, S. (2011). Empathic Processing: It's Cognitive and Affective Dimensions and Neuroanatomical Basis. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy*. Cambridge, Massachusetts: The MIT Press.
- Sheets-Johnstone, M. (2011). *The Primacy of Movement*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Sheets-Johnstone, M. (2009). *The Corporeal Turn. An Interdisciplinary Reader*. UK: Imprint-Academic.
- Sheets-Johnstone, M. (1966). *The Phenomenology of Dance*. New York: Books for Libraries.

Shreeves, R. (2006). Full Circle: From Choreography to Dance Movement Therapy and Back. In H. Payne (ed.). *Dance Movement Therapy: Theory, Research, Practice*. London/New York: Routledge.

Schubert, T. W. & Semin, G. R. (2009). Embodiment as a Unifying Perspective for Psychology. *European Journal for Social Psychology*, 39, pp.1135-1141.

Siegel, D. (2013). The Role of Internal and Interpersonal Attunement in Psychotherapeutic Change. Paper presented at *The Power of Non-Verbal Communication in the Talking Cure*. London: Confer Conference.

Siegel, D. (2010). *Mindsight*. London: Oneworld.

Silas, J., Levy, J.P. & Holmes, A. (2012). Sensitivity of 'Mu' Rhythm Modulation to the Relevance of an Observed Movement but not to Goal Congruency. *International Journal of Psychophysiology*, 85 (2), pp.168-173.

Silas, J. Levy, J.P., Nielsen, M., Slade, L. & Holmes, Am (2010). Sex and Individual Differences in Induced and Evoked EEG Measures of Action Observation. *Neuropsychologia*, 48, pp. 2417 – 2426.

Silas, J. (2009). *The Social Mind and the Motoric Brain: Assessing the functional role of the mirror neuron system in social cognition using EEG measures*. Roehampton University: Unpublished PhD Thesis.

Singer, T. & Lamm, C. (2009). The Social Neuroscience of Empathy. *New York Academy of Sciences*, 1156, pp. 81-96.

Sletvold, J. (2014). Embodied Empathy in the Clinical Context: Empathy, Subjectivity and Reflexivity. Paper presented at *Mirror Neurons, Embodied Empathy and The Boundaries of the Self – The Art and Science of Deep Therapeutic Connection*. London: Confer Conference.

Sourina, O., Liu, Y. & Nguyen, M. K. (2011). Real-time EEG-based Emotion Recognition for Music Therapy. *Journal Multimodal User Interfaces*. DOI: 10.1007/s12193-011-0080-6.

Sperling, M., Richardson, D. & Orgs, G. (2016). *Taking Apart Togetherness. The Art and Science of Being a Group*. Siobhan Davies Studios.

- Spreng, R.N., McKinnon, M.C., Mar, R.A. & Levine, B. (2009). The Toronto Empathy Questionnaire. National Institute of Health. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19085285>.
- Stern, D. (2010). *Forms of vitality. Exploring Dynamic Experience in Psychology, the Arts, Psychotherapy, and Development*. Oxford/New York: Oxford University Press.
- Stern, D. (1984). *The Interpersonal World of the Infant*. USA: Basic Books.
- Tanztheater Wuppertal Pina Bausch (2015) Retrieved from <http://www.pina-bausch.de/en/>.
- Ticini, L.F., Urgesi, C. & Calvo-Merino, B. (2015). *Embodied Aesthetic. Insight from Cognitive Neuroscience of the Performing Arts*. DOI: 10.1007/978-94-017-9379-7_7.
- Tortora, S. (2009). Dance/Movement Psychotherapy in Early Childhood Treatment. In S. Chaiklin & H. Wengrower (eds.) *The Art and Science of Dance/Movement Therapy, Life is Dance* (pp. 159 – 180). New York/London: Routledge.
- Trevarthen, C. (2013). Intersubjective Creativity with Infants: Narrative and Musicality Shared in Movement. Paper presented at *The Power of Non-Verbal Communication in the Talking Cure*. London: Confer Conference.
- Tedx Albertopolis. (2014). *A Tale of Two Cultures*. London: Royal Albert Hall.
- Umiltà, M.A., Berchio, C., Sestito, M., Freedberg, D. & Gallese, V. (2012). Abstract Art and Cortical Motor Activation: an EEG study. *Frontiers in Human Neuroscience*, 6, Article 311, November, pp.1-9.
- Valle, R. (ed). (1998). *Phenomenological Inquiry in Psychology: Existential and Transpersonal Dimensions*. New York/London: Plenum Press.
- Van Baaren, R.B., Decety, J., Dijksterhuis, A., Van der Leij, A. & Van Leeuwen, M.J. (2011). Being Imitated: Consequences of Nonconsciously Showing Empathy. In J. Decety & W. Ickes (eds.). *The Social Neuroscience of Empathy* (pp. 31-42). Cambridge, Massachusetts: The MIT Press.
- Van Elk, M., Van Schie, H.T., Hunniun, S., Vesper, C. & Bekkering, H. (2008). You'll Never Crawl Alone: Neurophysiological Evidence for Experience-Dependent Motor Resonance in Infancy. *NeuroImage*, 43 (4), pp. 808 – 814.

Varnum, M.E.W., Blais, C. & Brewer, G. A. (2015). Social Class Affects Mu-suppression during Action Observation. *Social Neuroscience*, DOI: 10.1080/17470919.2015.1105865.

Wachowicz, F. & Stevens, C.J (2011). The Role of Attention, Perception and Memory Processes in Choreographic Cognition. *Issues for Research and Analysis*, Research Gate pp. 211-223. DOI: 10.13140/2.1.4571.6167.

Walker, M.T. (2006). The Social Construction of Mental Illness and its Implications for the Recovery Model. *International Journal of Psychosocial Rehabilitation*. 10 (1), pp. 71-87.

Warburton, E.C. (2011). Of Meanings and Movements: Re-Languaging Embodiment in Dance Phenomenology and Cognition. *Congress on Research in Dance*, 43 (2), Winter pp. 65-84. DOI:10.1017/S0149767711000064.

Watson, J.C. & Greenberg, L.S (2011). Empathic Resonance: A Neuroscience Perspective. In J. Decety & W. Ickes (eds.) *The Social Neuroscience of Empathy* (pp. 125 – 137). Cambridge, Massachusetts: The MIT Press.

Wikipedia (2016). *List of Terrorist Incidents, January–June 2016*. Retrieved from https://en.wikipedia.org/wiki/List_of_terrorist_incidents,_January%E2%80%93June_2016.

Wilkinson, J. (2015). Dissatisfied Ghosts: Theatre Spectatorship and the Production of Cultural Value. *Participations – Journal of Audience and Reception Studies*, 12 (1), May, pp.133-153.

Williams, S. J. & Bendelow, G. (1998). *The Lived Body: Sociological Themes, Embodied Issues*. London/New York: Routledge.

Willson, S. (2014) *Performing Medicine*. Retrieved from <http://performingmedicine.com/>.

Winnicott, D. W. (1971). *Playing and Reality*. London: Tavistock.

Winship, L. (2014). The Doctor will Dance for you Now. *The Guardian*. Retrieved from <http://www.theguardian.com/stage/2014/nov/02/dance-shows-curiers-how-to-heal>.

Woodruff, C.C. & Klein, S. (2013). Attentional Distraction, μ -suppression and Empathic Perspective Taking. *Experimental Brain Research*, 229, pp. 507 – 515.

Wyatt, J. & Adams, T.E. (2014). *On (Writing) Families. Autoethnographies of Presence and Absence, Love and Loss*. Rotterdam/Boston/Taipei: Sense Publishers.

Yang, C., Decety, J. Lee, S., Chen, C. and Cheng, Y. (2009). Gender Differences in the Mu Rhythm during Empathy for Pain: An Electroencephalographic Study. *Brain Research*, 1251, pp. 176 – 184.

Your Story Calls Me (2012). Directed by Beatrice Allegranti. www.beatriceallegranti.com.

Zahavi, D. (2001). Beyond Empathy, Phenomenological Approaches to Intersubjectivity. *Journal of Consciousness Studies*, 8, (5-7), pp. 151 – 167.

Zaki, J. & Ochsner, K.N. (2012). The Neuroscience of Empathy: Progress, Pitfalls and Promise. *Nature Neuroscience*, 15, pp. DOI: 675-680 DOI:10.1038/nn.3085.